

# ***GROUND CONTROL SURVEY REPORT***

**GPS SURVEY  
FOR LIDAR CONTROL**

**BUFFALO CANAL, FROG AND  
GAMBLE CREEK PROJECTS (L007 / L010)  
AND  
LITTLE MANATEE RIVER FRESHWATER MFL (B181)**

Authorization No: 05PCSOW0048 & 05PCSOW0072

*Services provided by:*



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August 2006

Southwest Florida Water Management District  
2379 Broad Street  
Brooksville, FL 34604-6899

Attn: Jim Owens, PSM

Re: Buffalo Canal, Frog and Gamble Creek Projects and Little Manatee River  
Freshwater MFL

This photogrammetric mapping ground control survey is certified to the Southwest Florida Water Management Standards applicable for the work, as set forth in Chapter 61G17-6, Florida Administrative Code.

Stephen L. Hebert, P.L.S.

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## **ABSTRACT**

## **ABSTRACT**

This report documents the GPS ground surveys conducted in support of LIDAR data collection for Buffalo Canal, Frog and Gamble Creek Projects and Little Manatee River Freshwater MFL. The data was collected between February 10 and February 19, 2005. The ground control stations were established utilizing four Trimble 4000 SSE receivers, three Trimble 4000 SSI receivers and one Trimble 4700 receiver with fixed-height tripods, seven Trimble Compact L1/L2 antennas with ground plane and one Trimble microcentered L1/L2 antenna with ground plane. There were no problems encountered during this survey.

Following the control network surveys, surveys were conducted at 7 sites utilizing the base stations established in the static network. These surveys established “Ground Truth” data at each site on different surface types, including asphalt, concrete, mowed grass, sand, tall grass, thick cut grass, trees/grass, and bush/gravel.

Statistical comparisons were made between ground truth points collected in the survey and airborne LIDAR points which fell within 3 feet of the ground truth points. These statistics can be seen on pages 11-15. Comparisons were also made between the survey points and the LIDAR derived terrain surface. These comparisons provide an additional verification of the LIDAR data against the survey data.

The horizontal and vertical datums used for this project are listed below:

Coordinate System: US State Plane 1983

Zone: Florida West 0902

Horizontal Datum: NAD83

Vertical Datum: NAVD88

Geoid Model: Geoid03

Units: US Survey Feet

## **SURVEY METHODOLOGY**

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Prior to beginning the survey collection, a reconnaissance was done of the existing control in the project area, and surrounding areas. Based on the results of the findings, the control to be included in the network was selected based on their locations, horizontal and vertical orders, and their accessibility. In addition to the survey control, several Continuously Operating Reference Stations (CORS) were included into the GPS network. All control monuments and CORS can be found in the Fully-Constrained Adjustment table, found in Section 4-B, and can also be seen on the GPS Network Map shown in Section 4-A.

The GPS network was planned to conform with the guidelines established in NGS-58, Guidelines for Establishing GPS-derived Ellipsoid Heights. Control monuments were tied together with several sessions, for at least five hours each. The control monuments were tied to the secondary control monuments and newly established monuments with a minimum of three occupations, for at least one hour each.

After the static GPS network was completed, the ground control was collected using real-time kinematic GPS (GPS-RTK). The ground control points can be seen in Section 5. The GPS-RTK data was collected from base stations tied into the static GPS network, and additional “check-in” points were collected and compared to positions established in the static network. The ground control data was then processed and used to verify the LIDAR positions. The LIDAR point comparisons can be seen on pages 11-15.

The horizontal and vertical datums used for this project are listed below:

Coordinate System: US State Plane 1983

Zone: Florida West 0902

Horizontal Datum: NAD83

Vertical Datum: NAVD88

Geoid Model: Geoid03

Units: US Survey Feet

## **MAIN REPORT**



## **STATIC GPS SUMMARY**

The Standard Operating Procedure for the data collection includes a geodetic control network plan designed to maximize the use of the highest order control points in the area of interest, and to optimize the spatial distribution of geodetic control across the network.

Also included is the simultaneous occupation of points designed to provide redundant vectors and loop closures, as well as a collection of a superfluity of points to compare observed values against published values of geodetic control points.

In addition, the static GPS network was established to verify the compatibility and correlation of existing published NGS controls in the project area. Horizontal and vertical constraints were selected based on the order of accuracy and correlation of the controls selected.

## **PRELIMINARY ANALYSIS**

The baselines were processed using Trimble Geomatics Offices's baseline processing module, WAVE (*Weighted Ambiguity Vector Estimator*). Ionosphere-free fixed solutions were found to provide the best results. Preliminary blunder detections were undertaken using "Redundant Vectors" and Global Network Closures and any extremely large errors were eliminated.

## **MINIMALLY CONSTRAINED ADJUSTMENT**

The data are then processed using a minimally constrained geodetic control network to test the network internally, without external constraints, and produce a statistical summary. The statistics from this process are required to be within the tolerance outlined in the Geometric Geodetic Accuracy Standards and Specifications for using GPS Relative Positioning Techniques, published by the FGCC. These tolerances are represented as ellipsoids showing the margin of error value on a graph of the theoretical points, covariance values that indicate the degree of error of the vectors relative to the other vectors in the network, and a chi-squared test that compares the predicted variance determined through a least-squares analysis to the observed variance. The summary is evaluated to eliminate vectors that are outside of the error tolerances to be replaced with redundant vectors that are within the tolerances until all tolerances are met.

## **FULLY CONSTRAINED ADJUSTMENT**

The quality of the existing horizontal controls is assessed before undertaking the constrained adjustment. Geodetic inverses between the published NAD83 Coordinates of existing stations were compared with the geodetic inverses derived from the minimally constrained least square adjustment results. This distance analysis is especially useful,

since it provides a datum invariant means of comparison.

Once the minimally constrained network satisfies the requirements of the above tests, the highest order control points in the control network are selected with an optimum spatial relationship to fully constrain the network to known control points, and have their published values entered as the position for those points and the network re-adjusted. The fully constrained report is given in Section 4-B. The same statistical tests are rerun on the adjusted network, as well as visually comparing adjusted values of geodetic control points to published values of control points not used as constraints. Again, the summary is evaluated to identify vectors outside of the tolerances and constraining points reselected to obtain the best fit to the geoid where all vectors are within the prescribed tolerances.

## **ERROR ELLIPSES**

The adjustment results show that the a posteriori variance factor of the network was close to 1.0, as should be desired, and passed the  $\chi^2$  test. None of the residual components in the network were flagged for possible rejection under the  $\tau$ -max test at the 0.05 level of significance. The relative confidence ellipses reveal that the horizontal positional accuracy between all directly connected pairs of stations in the network were better than (1:100,000) at the 95% level of confidence. The horizontal and vertical Error ellipses are included in this report in Section 4-D.

## **GROUND TRUTH SUMMARY**

Surveys were conducted to establish ground truth data at representative sites throughout the project area. These sites were selected on the basis of the various types of ground surfaces and vegetation covers that would be encountered by the LIDAR surveys. As a quality control measure, a number of “check-in” points consisted of published horizontal and vertical control points within the area. The base stations used to collect survey data were included in the static GPS network, and were selected on the basis of their having an unobstructed view of the sky, as well as being in a location considered favorable for collecting ground truth data. The vertical and horizontal accuracy of each base station was determined by the statistical tests performed in the least squares adjustment process.

## **SAMPLE POINTS / TEST POINTS**

The test points were distributed and categorized into sites as shown in the Project Area Site Map attached in this report (Section 5-A). These sites were selected on the basis of various types of ground surfaces and vegetation covers. At the time of LIDAR data acquisition, checkpoints were collected on surfaces with asphalt, concrete, mowed grass, sand, tall grass, thick cut grass, trees/grass, and bush/gravel.

## DATA ANALYSIS

Data analysis was accomplished by comparing ground truth checkpoints with LIDAR points from the edited data set, which were within 3 feet horizontally from the ground truth points. The only exception to this were the ground truth points collected under tree canopy, where comparisons were made with LIDAR pulses that fell within 4 feet of the check points. This is because fewer LIDAR pulses are able to reach the ground in heavily forested areas, so the point spacing is larger than in cleared areas. Based on the number of returns and the density of points in this project, it was not necessary to compare to anything further away than 3 feet from the ground truth points. Note that the edited LIDAR points are simply a subset of the raw LIDAR points. The points that fell above the ground surface on vegetation canopies, buildings, or other obstructions were removed from the data set. Comparisons were also made between the survey points and the LIDAR derived terrain surface. These comparisons provide an additional verification of the LIDAR data against the survey data.

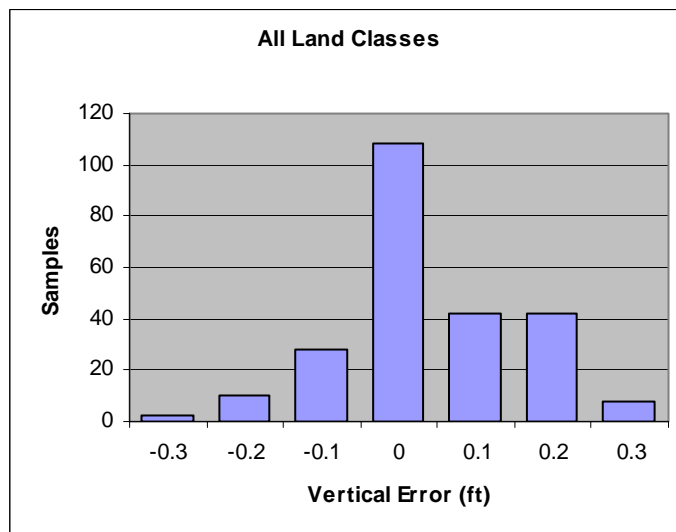
### LIDAR POINT COMPARISON

The result of these comparisons of these values indicated a Vertical Root Mean Square Error (RMSEz) of 0.156 feet, which equates to Vertical Accuracy of 0.306 feet at the 95 percent confidence level.

### OVERALL ACCURACY

A comparison of these values indicated a Vertical Root Mean Square Error (RMSEz) of 0.156 feet. This is within the vertical accuracy tolerance. The mean elevation difference for all points is 0.059 feet. Skewness is -0.254, indicating an approximately normal distribution. Descriptive statistics and a histogram of the vertical error distribution for all samples are shown below.

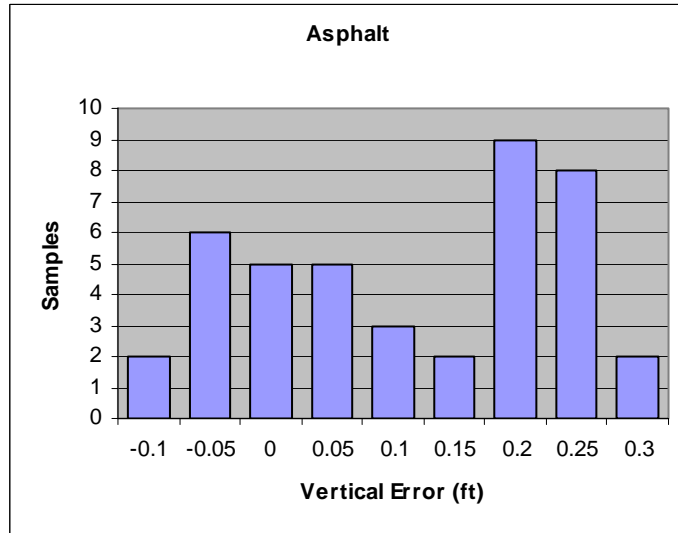
All Land Classes (ft)	
RMSEz	0.156
Mean	0.059
Standard Error	0.009
Median	0.060
Mode	0.040
Standard Deviation	0.145
Sample Variance	0.021
Kurtosis	-0.391
Skewness	-0.254
Range	0.670
Minimum	-0.330
Maximum	0.340
Count	240



## ASPHALT

This set includes only those points that were collected in areas of asphalt surfaces. The resulting RMSEz is 0.172 feet, which is within the accuracy specification. The skewness value is -0.155.

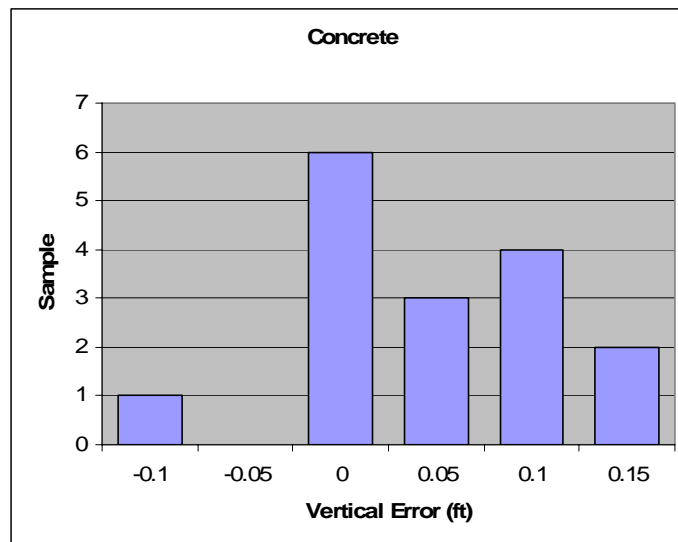
Asphalt (ft)	
RMSEz	0.172
Mean	0.115
Standard Error	0.020
Median	0.140
Mode	0.250
Standard Deviation	0.130
Sample Variance	0.017
Kurtosis	-1.337
Skewness	-0.155
Range	0.450
Minimum	-0.110
Maximum	0.340
Count	42



## CONCRETE

This set includes only those points that were collected in areas of concrete surfaces. The resulting RMSEz is 0.071 feet, which is within the accuracy specification. The skewness value is -0.089.

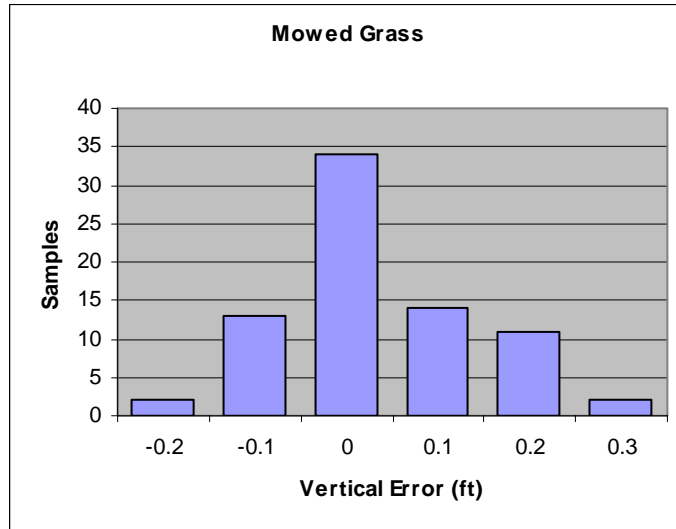
Concrete (ft)	
RMSEz	0.071
Mean	0.040
Standard Error	0.015
Median	0.035
Mode	-0.010
Standard Deviation	0.060
Sample Variance	0.004
Kurtosis	0.392
Skewness	-0.089
Range	0.240
Minimum	-0.090
Maximum	0.150
Count	16



## MOWED GRASS

This set includes only those points that were collected in areas of mowed grass. The resulting RMSEz is 0.146 feet, which is within the accuracy specification. The skewness is 0.097.

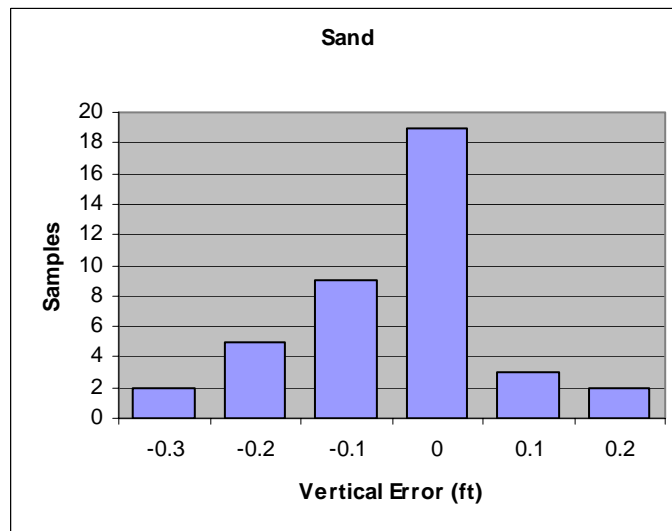
Mowed Grass (ft)	
RMSEz	0.146
Mean	0.053
Standard Error	0.016
Median	0.060
Mode	0.060
Standard Deviation	0.136
Sample Variance	0.019
Kurtosis	-0.721
Skewness	0.097
Range	0.550
Minimum	-0.220
Maximum	0.330
Count	76



## SAND

This set includes only those points that were collected in areas of sand surfaces. The resulting RMSEz is 0.173 feet, which is within the accuracy specification. The skewness is 0.045.

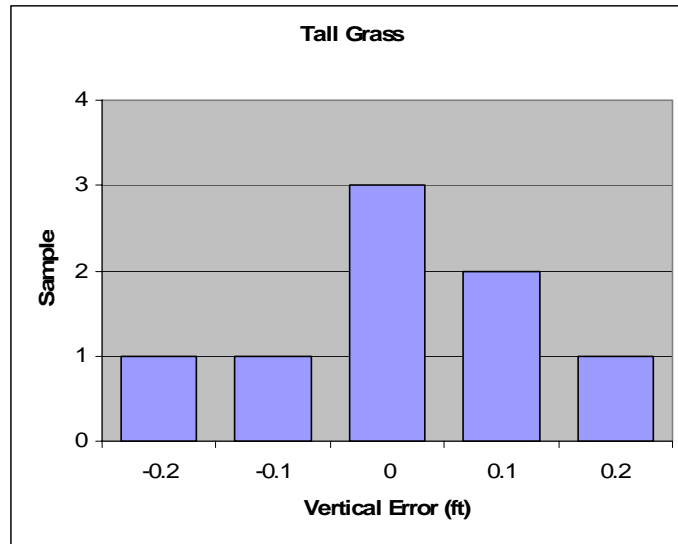
Sand (ft)	
RMSEz	0.173
Mean	-0.053
Standard Error	0.024
Median	-0.055
Mode	-0.280
Standard Deviation	0.150
Sample Variance	0.022
Kurtosis	-0.283
Skewness	0.045
Range	0.620
Minimum	-0.330
Maximum	0.290
Count	40



## TALL GRASS

This set includes only those points that were collected in areas with tall grass surfaces. The resulting RMSEz is 0.131 feet, which is within the accuracy specification. The skewness is -0.481.

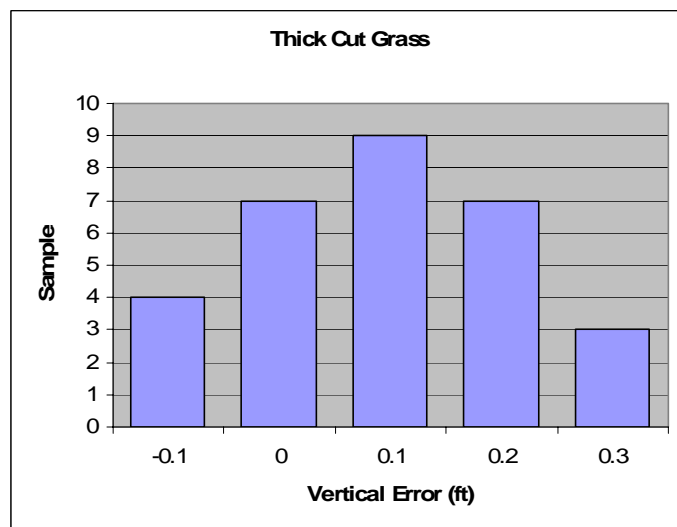
Tall Grass (ft)	
RMSEz	0.131
Mean	0.034
Standard Error	0.048
Median	0.035
Mode	0.030
Standard Deviation	0.135
Sample Variance	0.018
Kurtosis	1.753
Skewness	-0.481
Range	0.470
Minimum	-0.220
Maximum	0.250
Count	8



## THICK CUT GRASS

This set includes only those points that were collected in areas with thick cut grass surfaces. The resulting RMSEz is 0.168 feet, which is within the accuracy specification. The skewness is -0.153.

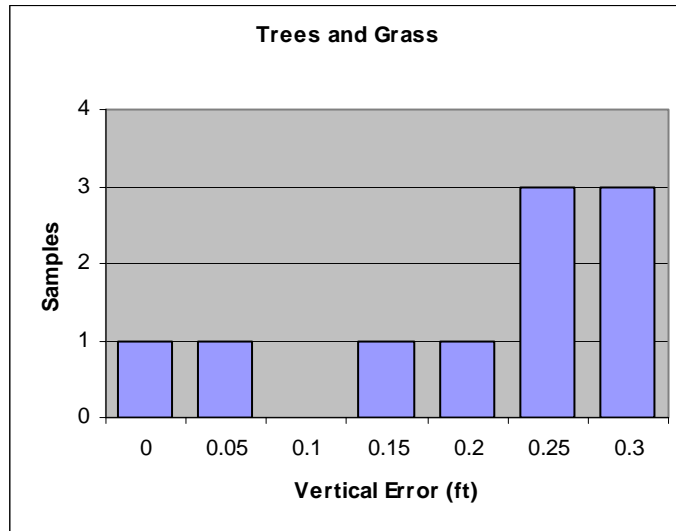
Thick Cut Grass (ft)	
RMSEz	0.168
Mean	0.139
Standard Error	0.017
Median	0.140
Mode	-0.020
Standard Deviation	0.096
Sample Variance	0.009
Kurtosis	-0.852
Skewness	-0.153
Range	0.330
Minimum	-0.030
Maximum	0.300
Count	32



## TREES AND GRASS

This set includes only those points that were collected in areas with trees and grass surfaces. The resulting RMSEz is 0.228 feet, which is within the accuracy specification. The skewness is -0.688.

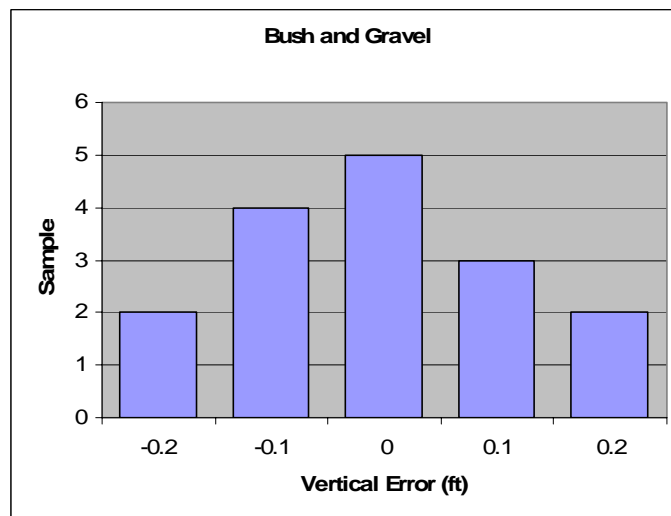
Trees and Grass (ft)	
RMSEz	0.228
Mean	0.204
Standard Error	0.034
Median	0.240
Mode	0.140
Standard Deviation	0.108
Sample Variance	0.012
Kurtosis	-0.808
Skewness	-0.688
Range	0.310
Minimum	0.010
Maximum	0.320
Count	10



## BUSH AND GRAVEL

This set includes only those points that were collected in areas with bush and gravel surfaces. The resulting RMSEz is 0.147 feet, which is within the accuracy specification. The skewness is -0.178.

Bush and Gravel (ft)	
RMSEz	0.147
Mean	-0.003
Standard Error	0.038
Median	0.035
Mode	-0.040
Standard Deviation	0.152
Sample Variance	0.023
Kurtosis	-1.288
Skewness	-0.178
Range	0.460
Minimum	-0.240
Maximum	0.220
Count	16

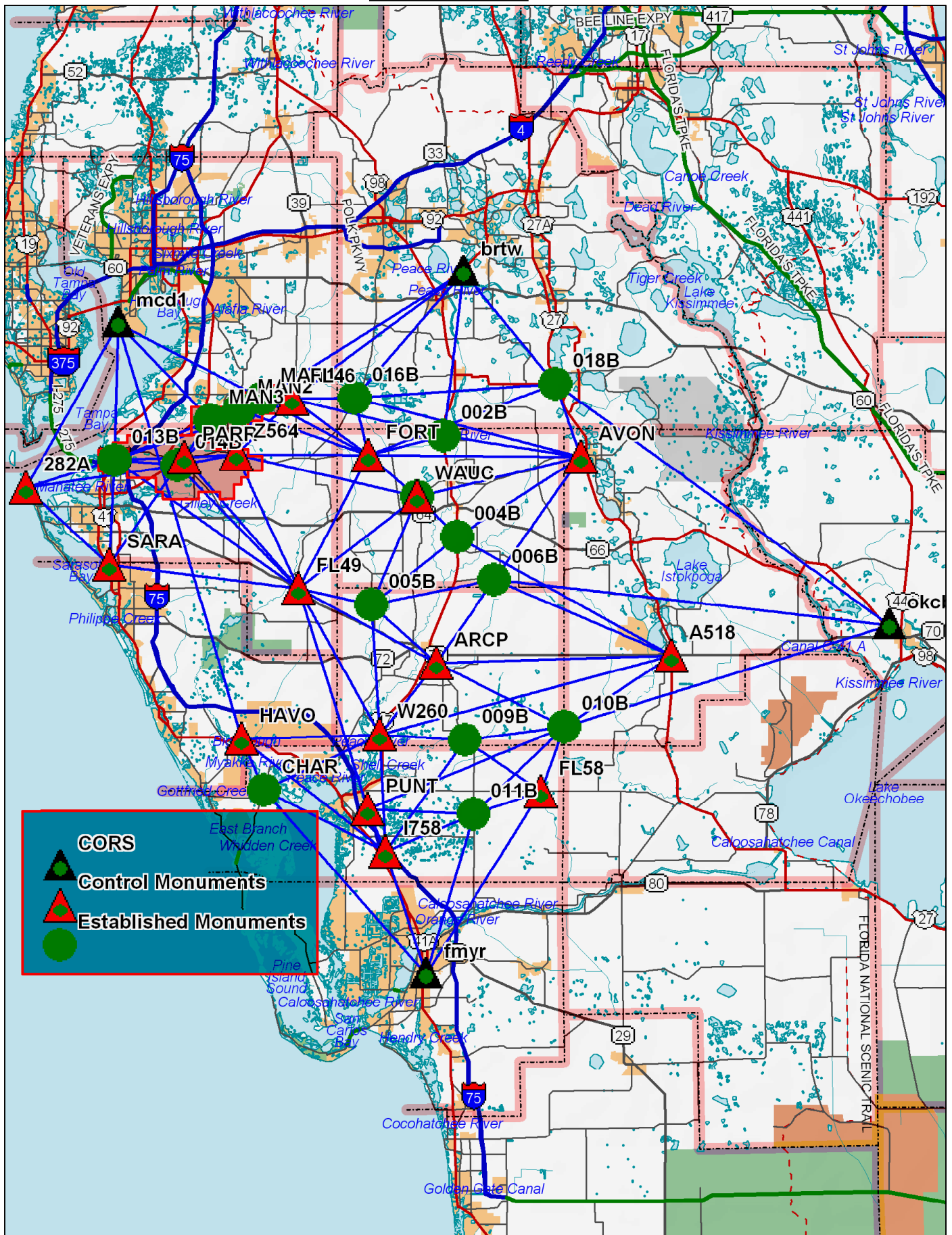


## **GPS NETWORK**

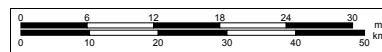


## **A. GPS Network Map**

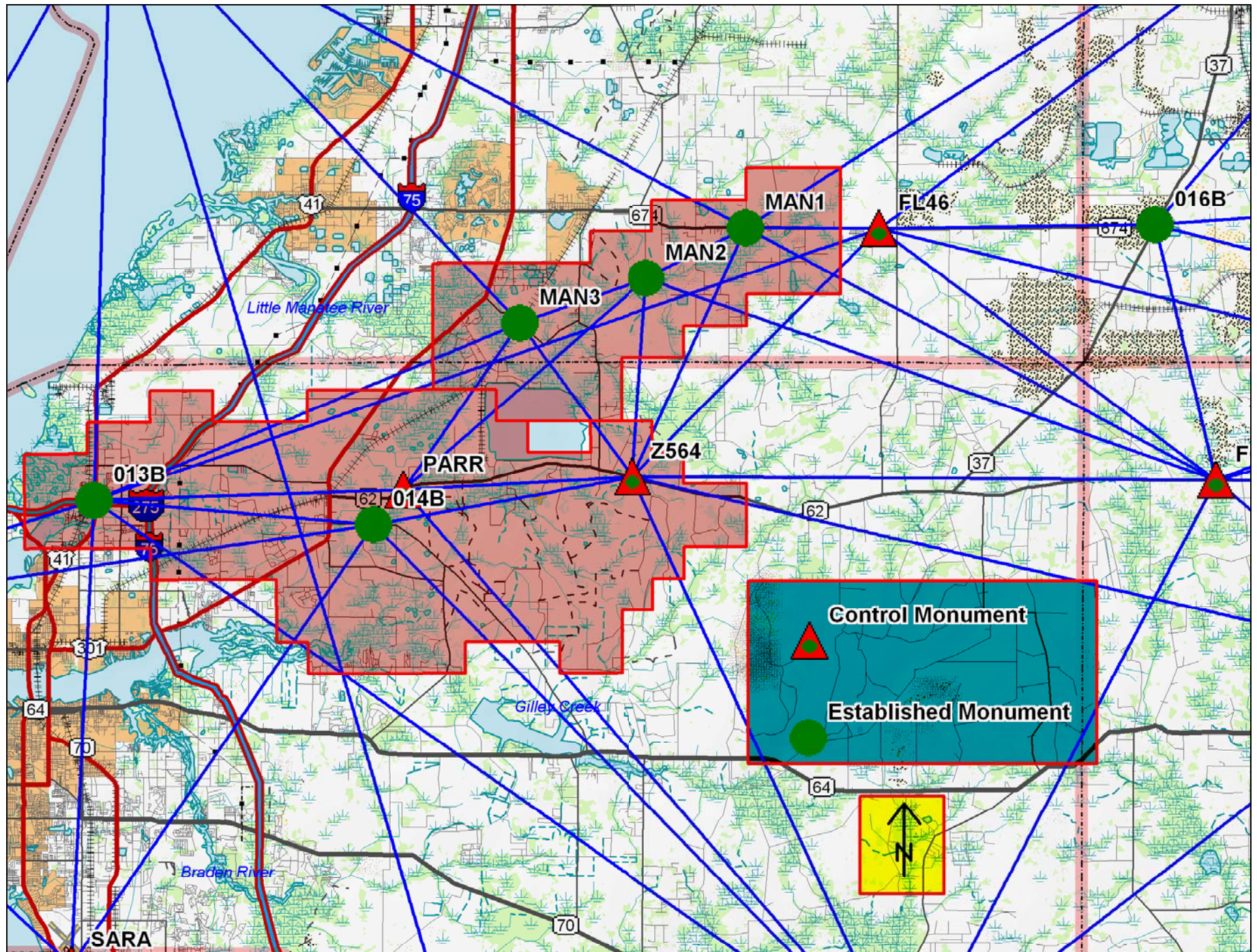
# GPS Network Map



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Zoom Level: 7-5 Datum: WGS84











## **B. Fully Constrained**

Buffalo Canal, Frog and Gamble Creek Projects and Little Manatee River Freshwater MFL  
Ground Truth  
GPS Control Network  
Fully-Constrained Adjustment

Coordinate System: US State Plane 1983  
Zone: Florida West 0902  
Horizontal Datum: NAD83  
Geoid Model: Geoid03  
Units: US Survey Feet

<b>Name</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Northing</b>	<b>Easting</b>	<b>Elevation</b>	<b>Height</b>	<b>Northing error</b>	<b>Easting error</b>	<b>Ellip error</b>	<b>Fixed (LLh)</b>
brtw	27°56'58.64223"N	81°46'58.20127"W	1314451.266	726276.703	130.473	44.502	0.000	0.000	0.030	LL
fmyr	26°35'27.50814"N	81°51'50.97251"W	820515.883	700558.082	35.657	-43.553	0.000	0.000	0.000	LLh
mcd1	27°50'59.33879"N	82°31'56.33636"W	1278477.277	484154.808	34.282	-46.998	0.000	0.000	0.000	LLh
okcb	27°15'57.71572"N	80°51'19.18214"W	1067579.581	1028027.524	42.120	-45.128	0.000	0.000	0.000	LLh
282A	27°31'56.86901"N	82°43'56.29928"W	1163433.882	418843.334	2.172	-77.445	0.043	0.036	0.059	
A518	27°12'26.16974"N	81°19'44.24947"W	1045100.307	874271.918	136.210	54.052	0.000	0.000	0.000	LL
ARCP	27°11'34.70369"N	81°50'30.44703"W	1039351.899	707594.480	57.809	-22.693	0.010	0.010	0.020	
AVON	27°35'29.33331"N	81°31'35.66239"W	1184481.325	809510.077	151.562	66.663	0.013	0.010	0.020	
CH1C	26°56'42.14258"N	82°13'02.80426"W	949253.988	585327.618	4.966	-73.243	0.052	0.043	0.066	
CHAR	26°56'51.80782"N	82°12'57.70514"W	950229.132	585790.726	3.711	-74.509	0.016	0.013	0.026	
FL46	27°42'16.54245"N	82°09'17.10263"W	1225340.692	606094.617	115.828	33.846	0.013	0.013	0.023	
FL49	27°20'16.06691"N	82°08'28.36289"W	1091991.530	610323.463	46.635	-34.058	0.000	0.000	0.000	LL
FL58	26°56'42.27017"N	81°36'47.88931"W	949398.599	782144.608	56.593	-23.584	0.020	0.016	0.030	
FORT	27°35'41.96722"N	81°59'22.03261"W	1185463.843	659582.554	122.064	39.938	0.013	0.013	0.023	
HAVO	27°02'48.34214"N	82°15'52.23382"W	986260.066	570072.698	6.751	-71.673	0.000	0.000	0.000	LL
I758	26°49'44.77474"N	81°57'08.42554"W	907053.357	671708.949	27.407	-51.554	0.010	0.007	0.016	
MA1C	27°42'30.36755"N	82°13'12.56056"W	1226769.005	584934.242	91.873	9.985	0.050	0.042	0.068	
MA2C	27°41'05.21993"N	82°16'09.69273"W	1218202.016	568995.406	62.352	-19.449	0.050	0.042	0.071	

MA3C	27°39'51.47026"N	82°19'58.59094"W	1210804.673	548398.207	49.192	-32.435	0.044	0.038	0.064	
MAN1	27°42'17.99819"N	82°13'12.73023"W	1225519.916	584916.761	87.634	5.747	0.041	0.035	0.064	
MAN2	27°40'58.76185"N	82°16'09.74682"W	1217549.860	568989.119	56.191	-25.609	0.050	0.042	0.068	
MAN3	27°39'48.39618"N	82°19'54.21711"W	1210493.180	548790.639	52.394	-29.236	0.050	0.042	0.071	
PARR	27°35'26.78536"N	82°23'19.48549"W	1184128.438	530251.005	32.554	-48.715	0.044	0.038	0.064	
PUNT	26°54'38.51632"N	81°59'27.83573"W	936710.266	659078.216	21.322	-57.649	0.041	0.035	0.061	
SARA	27°23'01.26478"N	82°33'06.36323"W	1109043.694	477112.517	25.764	-54.129	0.044	0.035	0.061	
W260	27°03'17.78009"N	81°57'52.51060"W	989143.809	667692.459	25.880	-53.720	0.031	0.025	0.041	
WAUC	27°30'54.36904"N	81°53'00.60849"W	1156439.181	693926.227	101.681	19.517	0.031	0.025	0.041	
WMD1	27°30'54.28086"N	81°53'00.43686"W	1156430.291	693941.687	101.983	19.819	0.073	0.061	0.100	
Z564	27°35'46.81768"N	82°16'33.73990"W	1186053.277	566761.791	106.810	25.190	0.043	0.036	0.062	
001C	27°35'41.13095"N	81°59'20.58262"W	1185379.406	659713.016	122.542	40.415	0.043	0.036	0.059	
002B	27°37'58.12624"N	81°49'31.24012"W	1199253.405	712716.177	96.824	13.727	0.046	0.036	0.059	
002C	27°37'52.67410"N	81°49'32.51850"W	1198702.667	712601.979	93.725	10.639	0.046	0.036	0.056	
003C	27°35'24.85627"N	81°31'30.29568"W	1184031.064	809994.675	151.376	66.475	0.049	0.039	0.066	
004B	27°26'17.60099"N	81°47'46.81498"W	1128527.258	722224.251	71.543	-10.563	0.046	0.039	0.066	
004C	27°26'13.20941"N	81°47'46.85329"W	1128083.788	722221.525	72.178	-9.920	0.049	0.039	0.072	
005B	27°18'21.53143"N	81°58'57.83473"W	1080400.334	661774.210	67.984	-12.746	0.046	0.039	0.062	
005C	27°18'04.45045"N	81°58'57.92112"W	1078675.523	661766.655	66.905	-13.799	0.043	0.033	0.056	
006B	27°21'18.13033"N	81°42'53.62995"W	1098338.487	748708.618	81.836	-0.099	0.052	0.039	0.079	
006C	27°21'36.79952"N	81°42'53.35703"W	1100223.756	748728.914	79.356	-2.617	0.043	0.036	0.062	
007C	27°11'37.91810"N	81°50'25.95869"W	1039676.994	707999.342	58.928	-21.580	0.052	0.043	0.066	
008C	27°03'18.42281"N	81°57'58.96402"W	989208.548	667109.015	25.300	-54.291	0.052	0.043	0.069	
009B	27°02'41.46635"N	81°46'45.72920"W	985538.287	727979.952	39.651	-40.554	0.046	0.039	0.062	
009C	27°02'28.47321"N	81°46'36.32869"W	984227.800	728832.217	39.275	-40.925	0.043	0.036	0.059	
010B	27°04'12.90702"N	81°33'44.36361"W	994956.194	798594.950	74.926	-5.444	0.046	0.036	0.059	
010C	27°04'28.00109"N	81°33'44.25850"W	996480.378	798599.152	74.540	-5.847	0.033	0.026	0.039	
011B	26°54'04.60483"N	81°45'36.24560"W	933360.106	734361.399	36.942	-42.983	0.033	0.026	0.039	
011C	26°54'00.11938"N	81°45'36.23211"W	932907.199	734363.479	38.473	-41.449	0.075	0.062	0.098	

012C	26°49'49.40761"N	81°57'13.47087"W	907520.976	671251.741	25.309	-53.647	0.041	0.035	0.061	
013B	27°35'10.44080"N	82°32'25.92831"W	1182662.549	481078.068	12.325	-68.227	0.044	0.035	0.061	
013C	27°35'24.80692"N	82°32'24.22771"W	1184112.645	481237.418	18.259	-62.302	0.044	0.035	0.058	
014B	27°34'32.50503"N	82°24'12.27420"W	1178662.206	525483.540	26.389	-54.775	0.047	0.038	0.068	
015C	27°35'48.34036"N	82°16'41.86737"W	1186208.681	566030.921	107.084	25.467	0.044	0.038	0.068	
016B	27°42'22.86387"N	82°01'09.69782"W	1225948.109	649902.373	141.820	59.336	0.047	0.038	0.074	
016C	27°42'28.85962"N	82°01'06.08081"W	1226553.536	650227.552	141.482	58.985	0.044	0.038	0.064	
018B	27°44'00.04383"N	81°34'54.70092"W	1235990.965	791427.157	152.862	67.378	0.041	0.032	0.058	
018C	27°44'00.70273"N	81°34'57.99848"W	1236056.500	791130.623	153.816	68.339	0.050	0.038	0.081	



### **C. Published Positions vs GPS Derived Positions**

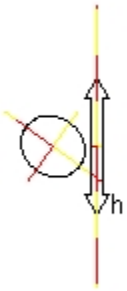
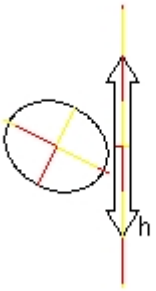
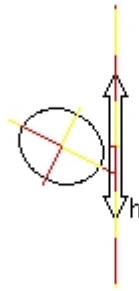
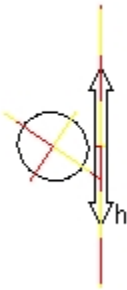
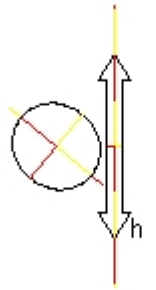
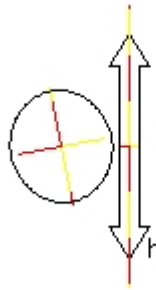
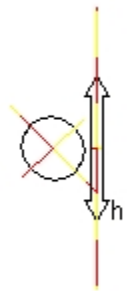
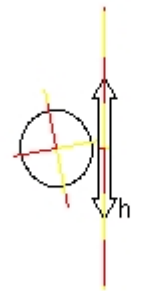
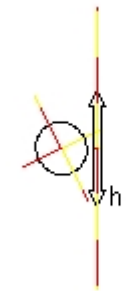
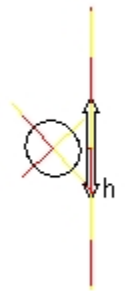
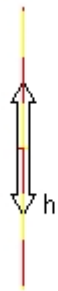
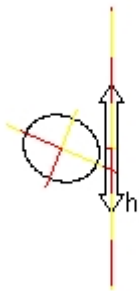
## Published Positions vs GPS Derived Positions

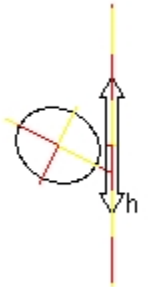
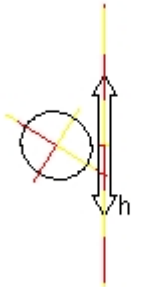
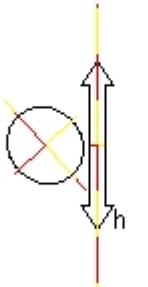

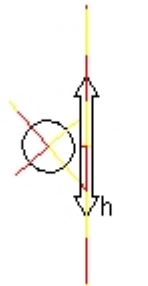
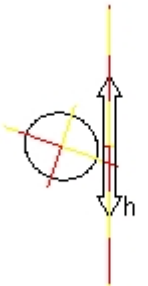
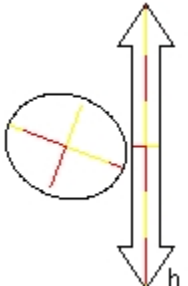
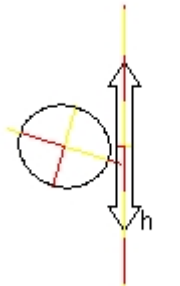
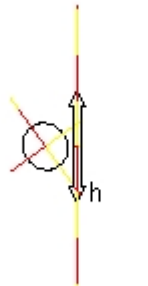
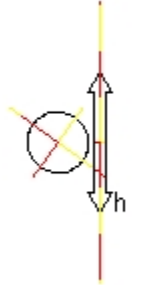
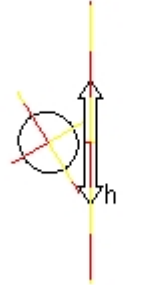
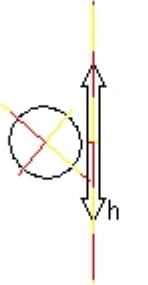
NGS Positions								GPS Derived Positions							
Designation	Northing (US feet)	Easting (US feet)	Elev (US feet)	Ellip (US feet)	Horiz Order	Vert Order	Ellip Order	Name	Northing (US feet)	Easting (US feet)	Elev (US feet)	Ellip (US feet)	delta Northing (US feet)	delta Easting (US feet)	delta Elev (US feet)
872 6282 A TIDAL	1163433.91	418843.36	2.08	-77.53	B	2	5	282A	1163433.88	418843.33	2.17	-77.45	0.03	0.03	-0.09
A 518	1045100.31	874271.92	136.20	54.07	A	1	4	A518	1045100.31	874271.92	136.21	54.05	0.00	0.00	-0.01
ARCPORT	1039351.92	707594.45	-	-23.10	B	-	5	ARCP	1039351.90	707594.48	57.81	-22.69	0.02	-0.03	
AVONPORT	1184481.34	809509.94	-	67.13	A	-	4	AVON	1184481.33	809510.08	151.56	66.66	0.02	-0.13	
FLGPS 46	1225340.70	606094.59	115.30	33.92	A	3	4	FL46	1225340.69	606094.62	115.83	33.85	0.01	-0.02	
FLGPS 49	1091991.53	610323.46	46.62	-33.60	B	2	5	FL49	1091991.53	610323.46	46.64	-34.06	0.00	0.00	-0.02
FLGPS 58	949398.59	782144.57	-	-23.79	A	-	4	FL58	949398.60	782144.61	56.59	-23.58	-0.01	-0.03	
FORT RESET	1185463.86	659582.54	-	39.80	B	-	5	FORT	1185463.84	659582.55	122.06	39.94	0.02	-0.02	
HAVOLINE 2	986260.07	570072.70	6.54	-72.01	B	2	5	HAVO	986260.07	570072.70	6.75	-71.67	0.00	0.00	-0.21
I75 82 A07	907053.38	671709.20	27.14	-	2	2	-	I758	907053.36	671708.95	27.41	-51.55	0.02	0.25	-0.27
PARISH	1184128.48	530251.00	32.44	-48.75	B	2	5	PARR	1184128.44	530251.01	32.55	-48.72	0.04	-0.01	-0.11
WAUCPORT	1156439.22	693926.18	-	19.39	B	-	5	WAUC	1156439.18	693926.23	101.68	19.52	0.04	-0.05	
W260	989143.80	667692.44	25.63	-53.90	B	1	5	W260	989143.81	667692.46	25.88	-53.72	-0.01	-0.02	-0.25
Z 564	-	-	106.82	-	-	2	-	Z564	1186053.28	566761.79	106.81	25.19			0.01

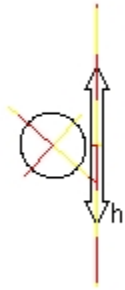

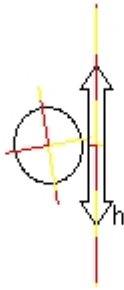
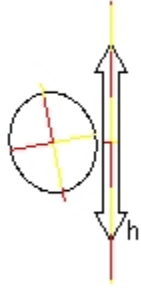
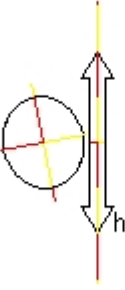
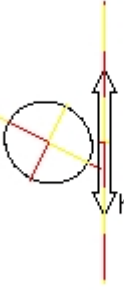
Note: Only the monuments with 2nd order or better positions were compared to the GPS derived positions (highlighted).

## **D. Error Ellipses**

## Point Error Ellipses

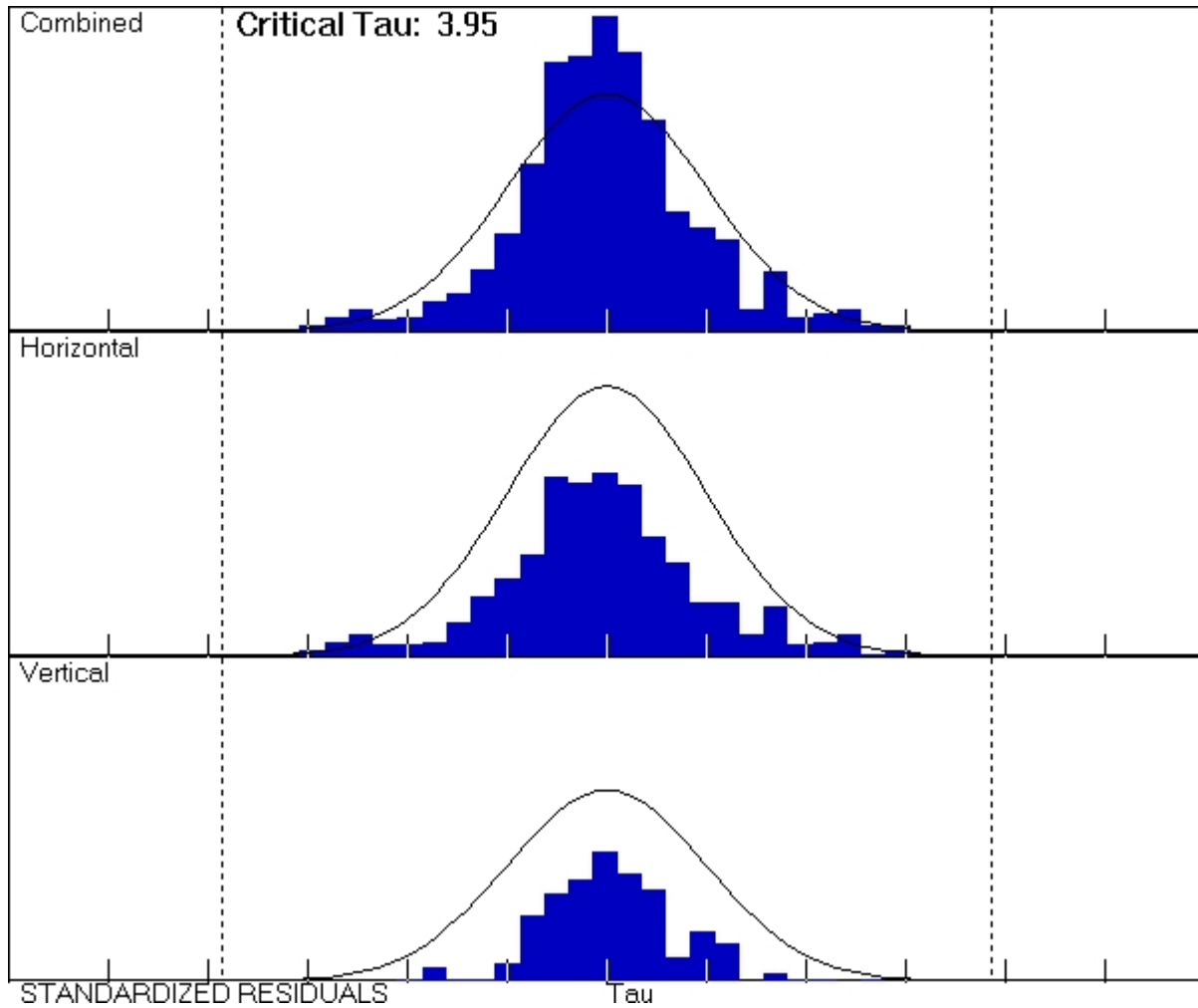
10B	PUNT	011B
 -37°	 -28°	 -28°
Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		
I758	FL58	009B
 -35°	 -40°	 -79°
Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		
W260	004B	WAUC
 -45°	 -79°	 -62°
Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		
5B	AVON	006B
 -48°	 0°	 -23°

Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		
<b>ARCP</b>	<b>14B</b>	<b>PARR</b>
		
Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		
<b>Z564</b>	<b>FL46</b>	<b>013B</b>
		
Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		
<b>282A</b>	<b>SARA</b>	<b>FORT</b>
		
Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		
<b>2B</b>	<b>WMD1</b>	<b>016B</b>
		

Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		
<b>018B</b>	<b>brtw</b>	<b>MAN1</b>
 -42°	 0°	 -80°
Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		
<b>MAN3</b>	<b>MAN2</b>	<b>CHAR</b>
 -77°	 -78°	 -27°
Tick Size: 0.033sft   Horizontal Bivariate Scalar: $2.45\sigma$ Vertical Univariate Scalar: $1.96\sigma$		

## **E. Histograms of Standardized Residuals**

## Histograms of Standardized Residuals



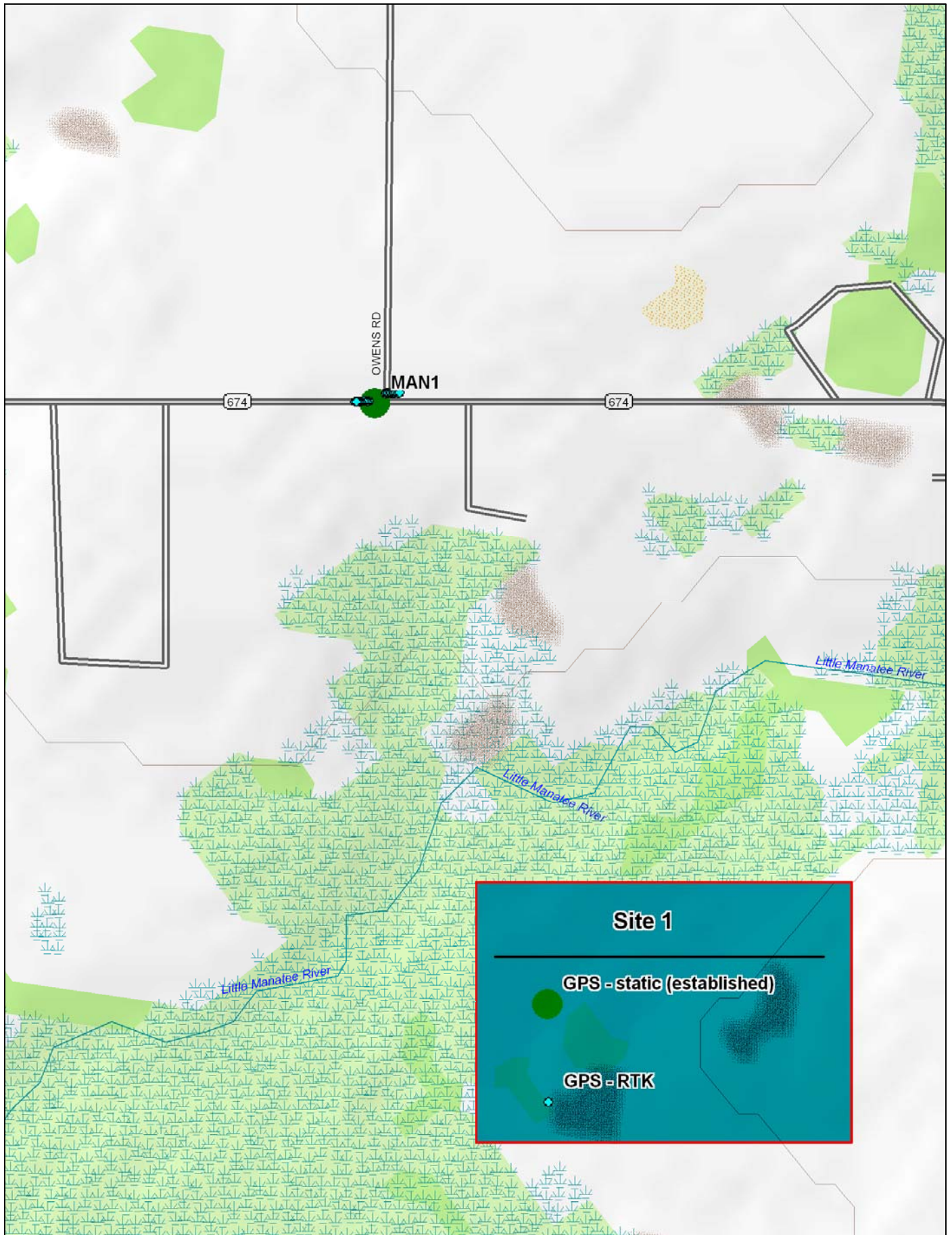


## **GROUND TRUTH SURVEY**

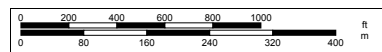
### **A. Map of Ground Truth Locations**

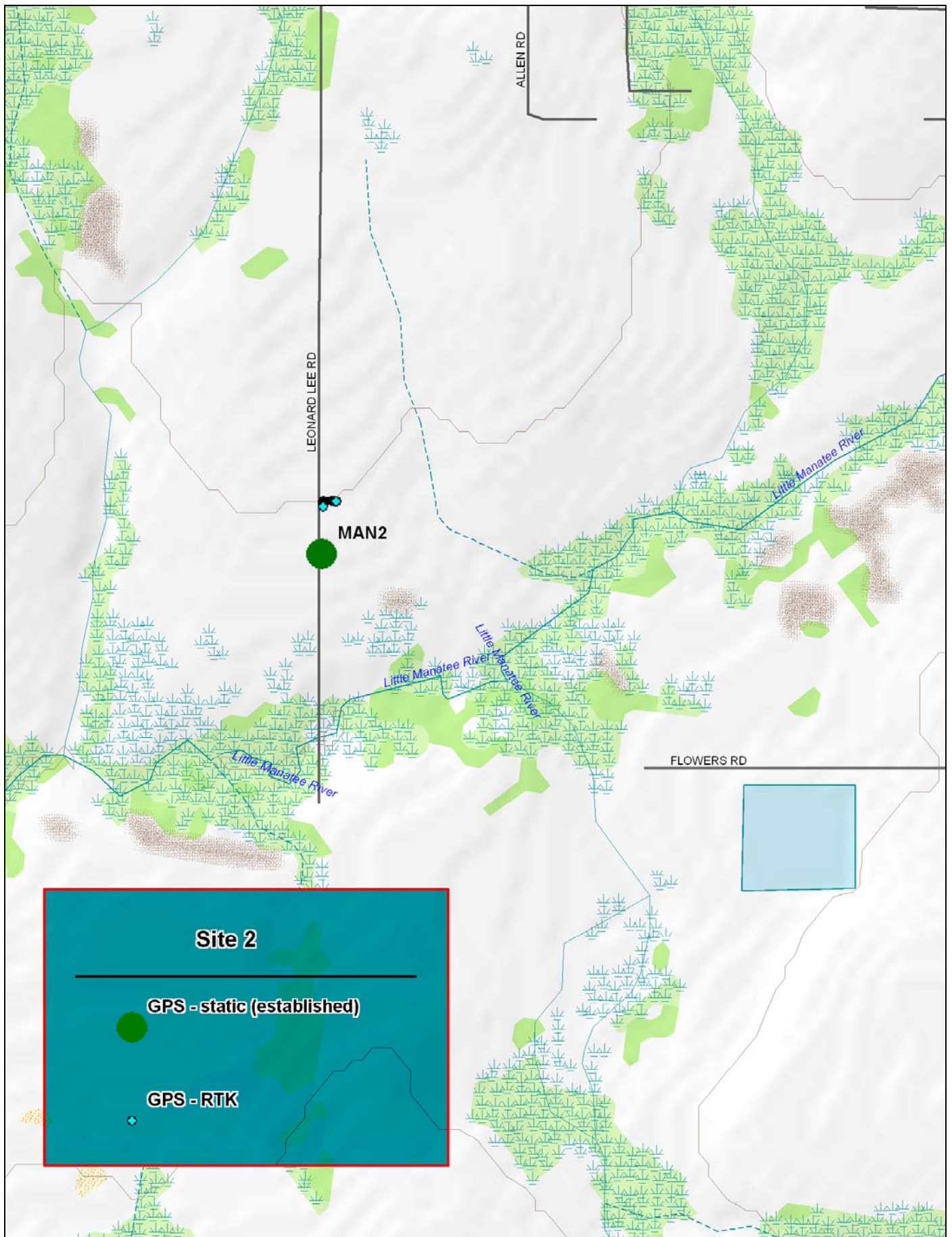




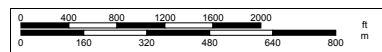


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Zoom Level: 14-1 Datum: WGS84

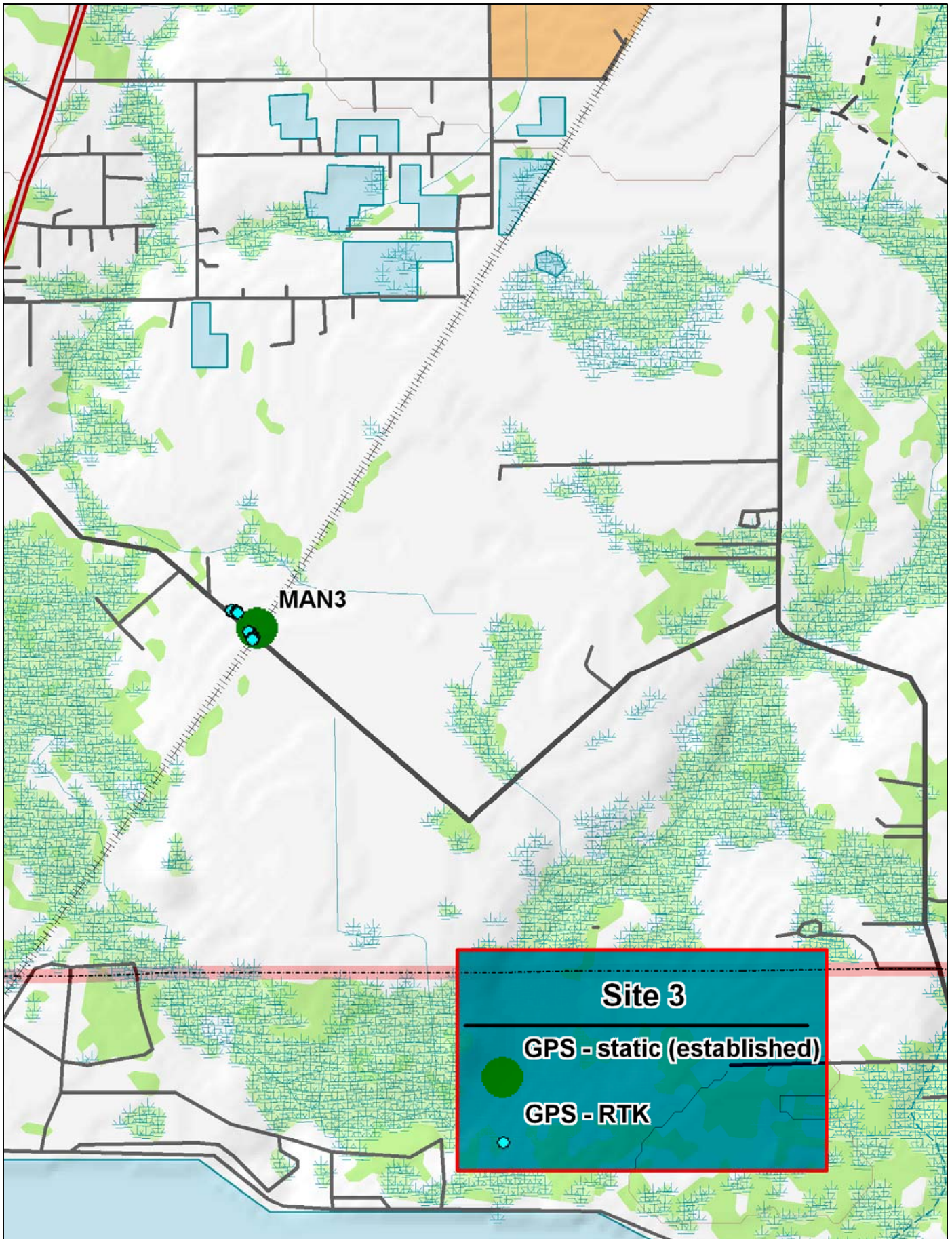




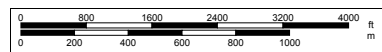
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Zoom Level: 13-0 Datum: WGS84







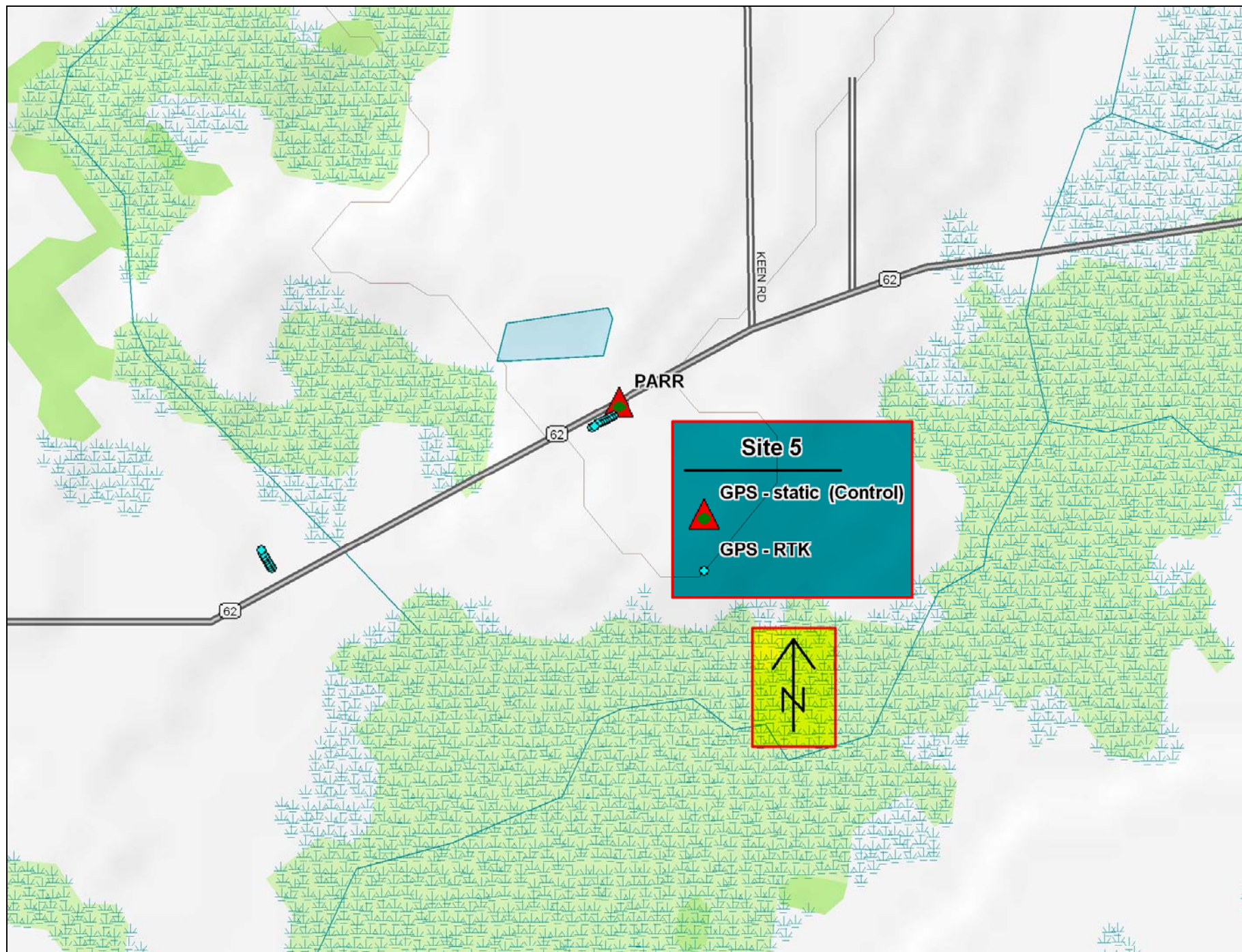
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Zoom Level: 12-5 Datum: WGS84











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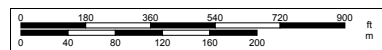
Scale: 1 : 9,600 Zoom Level: 14-2 Datum: WGS84 Map Rotation: 0° Magnetic Declination: 4.0°W

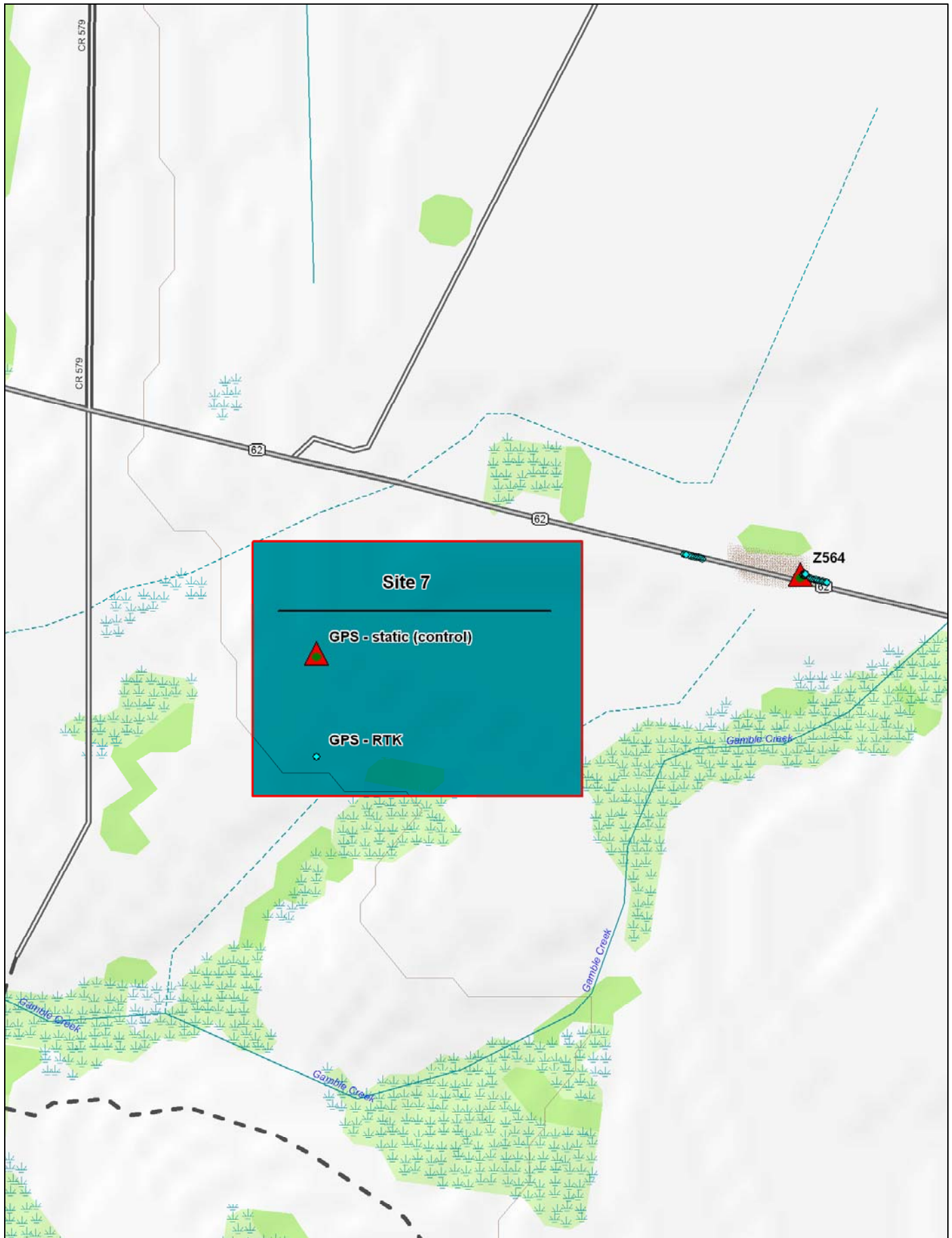
200 m



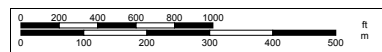


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Zoom Level: 15-0 Datum: WGS84





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Zoom Level: 14-1 Datum: WGS84



## **B. Ground Truth Analysis of LIDAR Points**

### Ground Check-Point Descriptive Codes

Surface Type		Sky Visibility		Surface Slope		Confidence	
1	Dirt	1	Open	1	Flat	1	Good
2	Sand	2	Part open	2	Slight Slope	2	Fair
3	Asphalt	3	Covered	3	Slope	3	Bad
4	Concrete						
5	Tall Grass						
6	Mowed Grass						
7	Trees and Brush						
8	Weeds and short grass						
9	Thick brush						
A	Thick cut grass						
B	Cultivated field - unplowed						
C	Limestone						
D	Trees and grass						
E	Gravel						
F	Brush and grass						

This table shows how the four character descriptive codes are assigned to each survey point in the ground control.

Example: 2111 = sand, open sky, flat slope, good confidence

**GROUND TRUTH ANALYSIS**  
**Comparison of LIDAR Points to RTK Ground-Truth Points**

**Horizontal units = US Survey Feet (US State Plane, Florida West, NAD83)**

**Vertical units = US Survey feet (NAVD88 – Geoid03)**

Survey X	Survey Y	Survey Z	LIDAR X	LIDAR Y	LIDAR Z	dx	dy	dz	dist	Code
548659.48	1210414.95	50.72	548659.30	1210417.70	51.10	0.18	-2.75	-0.38	2.76	2111
548664.18	1210411.38	50.74	548665.41	1210408.68	51.10	-1.23	2.70	-0.36	2.97	2111
548645.75	1210426.98	50.56	548644.66	1210424.22	50.92	1.09	2.76	-0.36	2.96	2111
548664.18	1210411.38	50.74	548664.91	1210413.42	51.07	-0.73	-2.04	-0.33	2.17	2111
548669.17	1210407.10	50.82	548667.94	1210409.51	51.14	1.23	-2.41	-0.32	2.70	2111
548659.48	1210414.95	50.72	548661.29	1210414.17	51.01	-1.81	0.78	-0.29	1.97	2111
548669.17	1210407.10	50.82	548668.43	1210404.67	51.10	0.74	2.43	-0.28	2.54	2111
548645.75	1210426.98	50.56	548646.19	1210428.04	50.84	-0.44	-1.06	-0.28	1.15	2111
548650.29	1210422.97	50.58	548650.59	1210422.02	50.85	-0.30	0.95	-0.27	0.99	2111
548677.15	1210400.34	50.97	548679.77	1210399.24	51.19	-2.62	1.10	-0.22	2.85	2111
548645.75	1210426.98	50.56	548644.15	1210429.01	50.73	1.60	-2.03	-0.17	2.59	2111
566787.83	1186045.72	107.28	566787.48	1186043.29	107.43	0.35	2.43	-0.15	2.45	2111
566802.89	1186058.54	107.41	566805.04	1186058.27	107.56	-2.15	0.27	-0.15	2.17	2111
566781.84	1186046.94	107.44	566783.66	1186048.41	107.56	-1.82	-1.47	-0.12	2.34	2111
566786.50	1186053.31	107.32	566788.38	1186054.14	107.44	-1.88	-0.83	-0.12	2.05	2111
548682.20	1210395.89	51.00	548680.27	1210394.52	51.11	1.93	1.37	-0.11	2.37	2111
548677.15	1210400.34	50.97	548676.11	1210400.69	51.08	1.04	-0.35	-0.11	1.09	2111
566781.84	1186046.94	107.44	566779.76	1186047.44	107.54	2.08	-0.50	-0.10	2.14	2111
566790.48	1186060.75	107.39	566788.83	1186059.54	107.49	1.65	1.21	-0.10	2.05	2111
566786.50	1186053.31	107.32	566784.10	1186053.90	107.41	2.40	-0.59	-0.09	2.47	2111
569166.35	1218196.41	61.09	569165.29	1218198.32	61.17	1.06	-1.91	-0.08	2.18	2111
548655.50	1210418.66	50.61	548653.41	1210418.91	50.69	2.09	-0.25	-0.08	2.11	2111
566794.28	1186051.74	107.31	566796.60	1186049.85	107.37	-2.32	1.89	-0.06	3.00	2111
566793.44	1186044.49	107.32	566796.15	1186044.43	107.37	-2.71	0.06	-0.05	2.71	2111
566799.12	1186043.74	107.34	566799.53	1186043.71	107.38	-0.41	0.03	-0.04	0.41	2111
548682.20	1210395.89	51.00	548682.62	1210395.98	51.04	-0.42	-0.09	-0.04	0.42	2111
566800.10	1186050.06	107.31	566799.97	1186049.21	107.33	0.13	0.85	-0.02	0.86	2111
548659.48	1210414.95	50.72	548659.81	1210412.91	50.74	-0.33	2.04	-0.02	2.06	2111
566794.28	1186051.74	107.31	566791.53	1186051.42	107.31	2.75	0.32	0.00	2.77	2111
566802.89	1186058.54	107.41	566800.85	1186060.17	107.39	2.04	-1.63	0.02	2.61	2111
569108.55	1218199.32	61.06	569107.28	1218201.21	61.03	1.27	-1.89	0.03	2.28	2111
566790.48	1186060.75	107.39	566792.41	1186062.37	107.35	-1.93	-1.62	0.04	2.52	2111
566796.98	1186059.66	107.40	566797.50	1186060.70	107.35	-0.52	-1.04	0.05	1.16	2111
569142.37	1218197.81	61.12	569144.51	1218199.42	61.07	-2.14	-1.61	0.05	2.68	2111
569151.55	1218196.71	61.12	569149.62	1218198.32	61.06	1.93	-1.61	0.06	2.51	2111
569151.55	1218196.71	61.12	569152.12	1218199.57	61.05	-0.57	-2.86	0.07	2.92	2111
569134.41	1218198.21	61.09	569132.59	1218196.48	61.00	1.82	1.73	0.09	2.51	2111
569159.39	1218196.51	61.15	569157.39	1218197.95	61.06	2.00	-1.44	0.09	2.47	2111
569151.55	1218196.71	61.12	569151.59	1218194.90	60.98	-0.04	1.81	0.14	1.81	2111

569122.18	1218198.40	61.12	569124.30	1218199.24	60.97	-2.12	-0.84	0.15	2.28	2111
566793.44	1186044.49	107.32	566791.09	1186045.95	107.16	2.35	-1.46	0.16	2.77	2111
569173.99	1218195.46	61.01	569171.58	1218193.87	60.78	2.41	1.59	0.23	2.89	2111
569159.39	1218196.51	61.15	569159.22	1218199.44	60.86	0.17	-2.93	0.29	2.94	2111
569128.92	1218197.84	61.09	569131.05	1218197.30	60.74	-2.13	0.53	0.35	2.19	2111
548329.60	1210816.49	49.68	548329.19	1210818.35	49.79	0.41	-1.86	-0.11	1.90	3111
548334.44	1210812.24	49.73	548335.09	1210811.96	49.83	-0.65	0.28	-0.10	0.71	3111
548372.81	1210779.56	50.07	548370.96	1210781.51	50.14	1.85	-1.95	-0.07	2.68	3111
548362.75	1210788.05	49.97	548364.03	1210787.52	50.04	-1.28	0.53	-0.07	1.39	3111
548353.14	1210796.51	49.88	548353.39	1210796.85	49.95	-0.25	-0.34	-0.07	0.42	3111
481245.39	1184158.41	18.45	481246.31	1184156.74	18.51	-0.92	1.67	-0.06	1.91	3111
548372.81	1210779.56	50.07	548373.65	1210777.38	50.12	-0.84	2.18	-0.05	2.34	3111
481252.66	1184192.80	18.56	481251.55	1184194.48	18.59	1.11	-1.68	-0.03	2.01	3111
548339.64	1210808.37	49.77	548339.49	1210807.55	49.79	0.15	0.82	-0.02	0.83	3111
548357.90	1210792.38	49.93	548356.94	1210793.48	49.93	0.96	-1.10	0.00	1.46	3111
548357.90	1210792.38	49.93	548359.15	1210792.98	49.92	-1.25	-0.60	0.01	1.39	3111
548348.54	1210800.40	49.84	548349.47	1210799.67	49.83	-0.93	0.73	0.01	1.19	3111
548344.17	1210804.44	49.81	548343.18	1210806.61	49.79	0.99	-2.17	0.02	2.38	3111
548367.84	1210783.70	50.02	548367.98	1210781.57	49.99	-0.14	2.13	0.03	2.13	3111
481249.70	1184163.33	18.49	481248.23	1184163.56	18.45	1.47	-0.23	0.04	1.49	3111
548348.54	1210800.40	49.84	548345.58	1210800.18	49.80	2.96	0.22	0.04	2.96	3111
481255.27	1184221.44	18.55	481253.72	1184220.81	18.49	1.55	0.63	0.06	1.67	3111
548344.17	1210804.44	49.81	548344.98	1210805.95	49.74	-0.81	-1.51	0.06	1.71	3111
481250.30	1184222.43	18.52	481250.94	1184221.05	18.44	-0.64	1.38	0.08	1.52	3111
481254.18	1184207.25	18.57	481254.03	1184205.05	18.49	0.15	2.20	0.08	2.20	3111
481249.22	1184205.77	18.56	481251.31	1184205.01	18.45	-2.09	0.76	0.11	2.22	3111
566009.64	1186177.07	107.14	566008.48	1186174.94	106.97	1.16	2.13	0.17	2.42	3111
565979.85	1186185.10	107.14	565980.16	1186184.60	106.97	-0.31	0.49	0.17	0.58	3111
481245.39	1184158.41	18.45	481248.33	1184158.48	18.27	-2.95	-0.07	0.18	2.95	3111
481252.66	1184192.80	18.56	481254.24	1184194.65	18.38	-1.58	-1.84	0.18	2.43	3111
565946.53	1186192.86	107.08	565946.84	1186191.07	106.90	-0.31	1.79	0.18	1.82	3111
565994.64	1186181.80	107.18	565996.06	1186180.00	106.98	-1.42	1.80	0.20	2.29	3111
565905.76	1186202.59	107.09	565907.14	1186202.09	106.89	-1.38	0.50	0.20	1.47	3111
530204.40	1184038.63	29.98	530206.14	1184040.40	29.77	-1.74	-1.77	0.21	2.48	3111
565994.64	1186181.80	107.18	565992.24	1186181.23	106.96	2.40	0.57	0.22	2.47	3111
530175.31	1184023.25	29.97	530174.86	1184023.64	29.72	0.45	-0.39	0.25	0.60	3111
565868.21	1186211.68	107.05	565868.30	1186212.01	106.80	-0.09	-0.33	0.25	0.34	3111
565919.57	1186199.20	107.12	565916.69	1186199.07	106.87	2.89	0.13	0.25	2.89	3111
565905.76	1186202.59	107.09	565904.36	1186200.85	106.84	1.40	1.74	0.25	2.24	3111
584940.35	1225594.70	87.44	584940.11	1225595.90	87.22	0.24	-1.20	0.22	1.23	3121
584940.37	1225603.48	87.49	584940.89	1225601.69	87.26	-0.52	1.79	0.23	1.87	3121
584940.09	1225576.25	87.45	584940.90	1225574.34	87.21	-0.81	1.91	0.25	2.08	3121
584940.04	1225566.50	87.47	584940.14	1225568.55	87.21	-0.10	-2.05	0.26	2.06	3121
584940.70	1225621.89	87.59	584940.18	1225619.75	87.33	0.52	2.14	0.26	2.20	3121
584940.74	1225640.00	87.71	584940.48	1225640.91	87.44	0.26	-0.91	0.27	0.95	3121
584939.93	1225556.62	87.45	584938.61	1225556.95	87.14	1.32	-0.33	0.31	1.36	3121
584940.22	1225585.78	87.51	584942.43	1225585.95	87.17	-2.21	-0.17	0.34	2.21	3121

584940.68	1225630.70	87.64	584941.72	1225631.42	87.29	-1.04	-0.72	0.35	1.27	3121
584940.37	1225603.48	87.49	584937.89	1225602.38	87.13	2.48	1.10	0.36	2.71	3121
479549.17	1176172.23	14.09	479547.56	1176171.53	14.18	1.61	0.70	-0.09	1.76	4121
479576.20	1176142.91	13.13	479577.16	1176145.57	13.14	-0.96	-2.66	-0.01	2.83	4121
479557.02	1176158.25	13.72	479554.48	1176157.24	13.73	2.54	1.01	-0.01	2.73	4121
479559.45	1176163.00	13.72	479557.00	1176162.56	13.73	2.45	0.44	-0.01	2.49	4121
479576.20	1176142.91	13.13	479575.57	1176145.23	13.12	0.63	-2.32	0.01	2.40	4121
479570.54	1176152.84	13.33	479568.13	1176152.90	13.32	2.41	-0.06	0.01	2.41	4121
479549.17	1176172.23	14.09	479549.79	1176169.43	14.07	-0.62	2.80	0.02	2.87	4121
479554.41	1176167.66	13.94	479553.86	1176168.08	13.91	0.55	-0.42	0.03	0.69	4121
479550.92	1176163.57	13.94	479550.09	1176164.03	13.90	0.83	-0.46	0.04	0.95	4121
479564.52	1176158.44	13.54	479563.23	1176159.34	13.49	1.29	-0.90	0.05	1.57	4121
479554.41	1176167.66	13.94	479556.71	1176167.93	13.88	-2.30	-0.27	0.06	2.31	4121
479570.54	1176152.84	13.33	479571.27	1176150.37	13.25	-0.73	2.47	0.08	2.58	4121
479557.02	1176158.25	13.72	479557.29	1176157.13	13.63	-0.27	1.12	0.09	1.15	4121
479570.54	1176152.84	13.33	479570.98	1176155.73	13.24	-0.44	-2.89	0.09	2.92	4121
479565.91	1176151.15	13.45	479568.13	1176152.90	13.32	-2.22	-1.75	0.13	2.82	4121
479559.45	1176163.00	13.72	479561.34	1176160.68	13.57	-1.89	2.32	0.15	3.00	4121
528092.36	1183187.85	18.70	528092.97	1183187.52	18.92	-0.61	0.33	-0.22	0.70	5111
528108.85	1183160.55	18.48	528106.91	1183159.11	18.53	1.94	1.44	-0.05	2.42	5111
528066.41	1183234.68	18.96	528066.06	1183231.95	18.94	0.35	2.73	0.02	2.75	5111
528100.27	1183175.35	18.79	528102.59	1183174.53	18.76	-2.32	0.82	0.03	2.46	5111
528086.08	1183197.84	18.71	528086.33	1183195.75	18.67	-0.25	2.09	0.04	2.11	5111
528122.47	1183137.23	18.53	528124.35	1183137.50	18.44	-1.88	-0.27	0.09	1.90	5111
528078.28	1183210.54	18.94	528078.39	1183211.97	18.83	-0.11	-1.43	0.11	1.43	5111
528092.36	1183187.85	18.70	528090.48	1183187.29	18.45	1.88	0.56	0.25	1.96	5111
566952.73	1185996.88	106.55	566951.43	1185999.31	106.77	1.30	-2.43	-0.22	2.76	6111
525602.74	1178761.86	24.71	525601.36	1178761.58	24.92	1.38	0.28	-0.21	1.41	6111
566938.03	1186000.53	106.68	566937.98	1186002.78	106.85	0.05	-2.25	-0.17	2.25	6111
566835.01	1186025.01	106.61	566834.57	1186025.55	106.75	0.44	-0.54	-0.14	0.70	6111
548705.81	1210286.44	52.96	548705.07	1210285.60	53.10	0.74	0.84	-0.14	1.12	6111
566880.45	1186014.80	106.69	566879.85	1186017.23	106.82	0.60	-2.43	-0.13	2.50	6111
566938.03	1186000.53	106.68	566935.65	1186002.09	106.81	2.38	-1.56	-0.13	2.84	6111
548726.27	1210317.46	53.03	548726.68	1210315.55	53.16	-0.41	1.91	-0.13	1.95	6111
548715.50	1210301.15	52.98	548717.90	1210302.79	53.11	-2.40	-1.64	-0.13	2.91	6111
566910.57	1186007.28	106.60	566911.05	1186008.13	106.71	-0.48	-0.85	-0.11	0.97	6111
566952.73	1185996.88	106.55	566955.24	1185995.50	106.66	-2.51	1.38	-0.11	2.87	6111
548718.87	1210306.38	52.96	548720.02	1210304.28	53.07	-1.15	2.10	-0.11	2.40	6111
548718.87	1210306.38	52.96	548718.44	1210308.00	53.07	0.43	-1.62	-0.11	1.67	6111
525603.02	1178775.17	24.72	525601.30	1178776.86	24.82	1.72	-1.69	-0.10	2.41	6111
566923.86	1186003.92	106.74	566924.43	1186004.92	106.84	-0.57	-1.00	-0.10	1.15	6111
566850.18	1186021.69	106.48	566849.89	1186022.81	106.57	0.29	-1.12	-0.09	1.15	6111
479668.82	1176167.72	11.68	479670.58	1176168.07	11.76	-1.76	-0.35	-0.08	1.79	6111
479659.87	1176168.21	11.70	479660.69	1176168.61	11.78	-0.82	-0.40	-0.08	0.91	6111
479696.87	1176164.67	11.49	479694.56	1176165.29	11.55	2.31	-0.62	-0.06	2.39	6111
548732.66	1210327.32	53.03	548733.89	1210329.51	53.09	-1.23	-2.19	-0.06	2.51	6111
548736.78	1210333.24	53.13	548736.06	1210335.63	53.17	0.72	-2.39	-0.04	2.50	6111

548722.58	1210311.70	52.97	548723.63	1210313.04	53.01	-1.05	-1.34	-0.04	1.70	6111
548709.42	1210291.86	53.02	548710.87	1210290.50	53.06	-1.45	1.36	-0.04	1.99	6111
548736.78	1210333.24	53.13	548738.79	1210335.43	53.15	-2.01	-2.19	-0.02	2.97	6111
479687.26	1176165.95	11.52	479689.32	1176166.87	11.52	-2.06	-0.92	0.00	2.25	6111
548726.27	1210317.46	53.03	548724.16	1210318.14	53.03	2.11	-0.68	0.00	2.22	6111
525571.00	1178772.84	24.95	525569.44	1178774.91	24.94	1.56	-2.07	0.01	2.59	6111
525593.00	1178774.76	24.79	525591.21	1178775.83	24.78	1.79	-1.07	0.01	2.08	6111
525564.59	1178757.37	25.10	525563.77	1178758.86	25.09	0.82	-1.49	0.01	1.70	6111
525576.50	1178758.50	25.03	525576.61	1178758.11	25.00	-0.11	0.39	0.03	0.41	6111
479698.93	1176176.01	11.55	479696.23	1176176.78	11.51	2.70	-0.77	0.04	2.81	6111
566966.67	1185992.66	106.66	566968.70	1185993.16	106.62	-2.03	-0.50	0.04	2.09	6111
548709.42	1210291.86	53.02	548708.52	1210291.30	52.98	0.90	0.56	0.04	1.06	6111
479698.93	1176176.01	11.55	479699.82	1176175.10	11.50	-0.89	0.91	0.05	1.28	6111
525571.00	1178772.84	24.95	525571.96	1178774.26	24.90	-0.96	-1.42	0.05	1.72	6111
525615.91	1178775.81	24.62	525613.78	1178774.97	24.57	2.13	0.84	0.05	2.29	6111
525616.01	1178762.97	24.51	525615.56	1178763.75	24.46	0.45	-0.78	0.05	0.90	6111
479659.02	1176178.56	11.52	479660.02	1176179.42	11.46	-1.01	-0.86	0.06	1.32	6111
479688.97	1176176.68	11.61	479686.16	1176176.25	11.55	2.81	0.43	0.06	2.84	6111
479696.87	1176164.67	11.49	479696.90	1176165.91	11.43	-0.03	-1.24	0.06	1.24	6111
525589.57	1178759.68	24.86	525586.87	1178760.90	24.80	2.70	-1.22	0.06	2.96	6111
548736.78	1210333.24	53.13	548734.42	1210334.58	53.07	2.36	-1.34	0.06	2.72	6111
479669.34	1176177.48	11.55	479669.93	1176178.84	11.48	-0.59	-1.36	0.07	1.48	6111
479669.34	1176177.48	11.55	479667.01	1176177.68	11.47	2.33	-0.20	0.08	2.34	6111
566895.16	1186010.98	106.69	566893.95	1186008.87	106.61	1.21	2.11	0.08	2.43	6111
548712.74	1210296.36	52.98	548711.40	1210295.72	52.90	1.34	0.64	0.08	1.48	6111
479678.08	1176166.50	11.55	479676.06	1176166.64	11.46	2.02	-0.14	0.09	2.02	6111
479668.82	1176167.72	11.68	479667.68	1176166.90	11.59	1.14	0.82	0.09	1.40	6111
548729.62	1210322.12	52.99	548727.21	1210320.77	52.90	2.41	1.35	0.09	2.76	6111
479678.08	1176166.50	11.55	479681.02	1176166.07	11.45	-2.95	0.43	0.10	2.98	6111
525615.91	1178775.81	24.62	525615.52	1178773.95	24.52	0.39	1.86	0.10	1.90	6111
525616.01	1178762.97	24.51	525613.85	1178764.85	24.41	2.16	-1.88	0.10	2.86	6111
525593.00	1178774.76	24.79	525594.05	1178774.25	24.68	-1.05	0.51	0.11	1.17	6111
479687.26	1176165.95	11.52	479686.85	1176165.28	11.40	0.41	0.67	0.12	0.78	6111
525589.57	1178759.68	24.86	525591.32	1178760.78	24.74	-1.75	-1.10	0.12	2.06	6111
479688.97	1176176.68	11.61	479688.65	1176177.81	11.48	0.32	-1.13	0.13	1.17	6111
566865.34	1186017.92	106.62	566864.89	1186019.19	106.49	0.45	-1.27	0.13	1.35	6111
585002.18	1225585.09	87.31	585003.86	1225584.38	87.18	-1.68	0.71	0.13	1.82	6111
479679.40	1176176.57	11.54	479680.33	1176176.91	11.39	-0.93	-0.34	0.15	1.00	6111
479659.87	1176168.21	11.70	479662.82	1176168.32	11.55	-2.95	-0.11	0.15	2.95	6111
584983.35	1225583.74	87.14	584985.14	1225584.23	86.97	-1.79	-0.49	0.17	1.85	6111
566923.86	1186003.92	106.74	566921.72	1186002.16	106.56	2.14	1.76	0.18	2.77	6111
584983.35	1225583.74	87.14	584982.60	1225586.13	86.96	0.75	-2.39	0.18	2.51	6111
584991.97	1225584.99	87.22	584991.45	1225582.32	87.01	0.52	2.67	0.21	2.72	6111
585021.06	1225584.71	87.28	585021.57	1225586.67	87.04	-0.51	-1.96	0.23	2.03	6111
585011.75	1225585.03	87.24	585009.65	1225586.34	87.00	2.10	-1.31	0.24	2.48	6111
585031.43	1225584.70	87.17	585033.68	1225586.50	86.93	-2.25	-1.80	0.24	2.88	6111
585011.75	1225585.03	87.24	585013.27	1225584.21	86.99	-1.52	0.82	0.25	1.73	6111



584991.97	1225584.99	87.22	584994.14	1225582.94	86.95	-2.17	2.05	0.27	2.98	6111
585002.18	1225585.09	87.31	585000.91	1225583.70	87.05	1.27	1.39	0.27	1.88	6111
585039.56	1225584.91	87.17	585040.02	1225586.61	86.90	-0.46	-1.70	0.27	1.76	6111
585060.04	1225584.94	87.23	585057.87	1225583.57	86.96	2.17	1.37	0.27	2.57	6111
585039.56	1225584.91	87.17	585036.97	1225584.70	86.88	2.59	0.21	0.29	2.60	6111
585049.56	1225585.21	87.14	585049.54	1225586.44	86.85	0.02	-1.23	0.29	1.23	6111
585031.43	1225584.70	87.17	585030.56	1225584.84	86.86	0.87	-0.14	0.31	0.88	6111
585071.16	1225585.61	86.99	585073.18	1225586.15	86.66	-2.02	-0.54	0.33	2.09	6111
585021.06	1225584.71	87.28	585018.36	1225584.45	86.92	2.70	0.26	0.36	2.71	6111
585060.04	1225584.94	87.23	585061.45	1225585.47	86.87	-1.41	-0.53	0.36	1.50	6111
480975.50	1182541.89	10.93	480977.74	1182541.23	10.96	-2.24	0.66	-0.03	2.33	A111
480963.85	1182540.81	10.75	480962.55	1182538.51	10.77	1.30	2.30	-0.02	2.64	A111
480941.04	1182538.99	10.56	480943.34	1182540.65	10.58	-2.30	-1.66	-0.02	2.84	A111
480919.57	1182536.44	10.36	480921.12	1182536.84	10.38	-1.55	-0.40	-0.02	1.60	A111
584832.54	1225531.76	87.25	584834.80	1225530.95	87.22	-2.26	0.81	0.03	2.40	A111
584841.79	1225531.54	87.31	584841.39	1225533.28	87.27	0.40	-1.74	0.04	1.78	A111
584795.61	1225531.80	87.35	584797.37	1225529.99	87.30	-1.76	1.81	0.05	2.53	A111
480908.88	1182535.09	10.12	480907.31	1182534.47	10.05	1.57	0.61	0.07	1.69	A111
480952.13	1182539.80	10.61	480950.05	1182540.30	10.53	2.08	-0.50	0.08	2.14	A111
584804.38	1225531.52	87.29	584803.89	1225529.39	87.21	0.49	2.13	0.08	2.19	A111
584822.84	1225531.69	87.34	584821.42	1225532.92	87.25	1.42	-1.23	0.09	1.88	A111
480908.88	1182535.09	10.12	480909.10	1182537.11	10.01	-0.22	-2.03	0.11	2.04	A111
480908.88	1182535.09	10.12	480909.26	1182532.62	10.01	-0.38	2.46	0.11	2.49	A111
481011.22	1182544.46	11.61	481012.71	1182543.86	11.49	-1.49	0.60	0.12	1.61	A111
480963.85	1182540.81	10.75	480964.05	1182539.93	10.62	-0.20	0.88	0.13	0.90	A111
480930.18	1182537.49	10.48	480929.62	1182536.45	10.35	0.56	1.04	0.13	1.18	A111
480941.04	1182538.99	10.56	480940.69	1182540.25	10.41	0.35	-1.26	0.15	1.30	A111
481011.22	1182544.46	11.61	481011.28	1182545.10	11.45	-0.06	-0.64	0.16	0.65	A111
480998.92	1182543.71	11.45	480999.45	1182541.65	11.28	-0.53	2.06	0.17	2.13	A111
480998.92	1182543.71	11.45	480999.30	1182546.06	11.27	-0.38	-2.35	0.18	2.38	A111
584871.35	1225530.91	87.16	584868.57	1225531.49	86.98	2.78	-0.58	0.18	2.84	A111
480975.50	1182541.89	10.93	480975.89	1182542.23	10.74	-0.39	-0.34	0.19	0.51	A111
480998.92	1182543.71	11.45	480997.61	1182542.57	11.25	1.31	1.14	0.20	1.73	A111
480963.85	1182540.81	10.75	480962.40	1182542.88	10.55	1.45	-2.07	0.20	2.53	A111
584861.90	1225531.40	87.11	584862.07	1225530.80	86.90	-0.17	0.60	0.21	0.63	A111
584813.91	1225531.51	87.34	584814.05	1225533.32	87.12	-0.14	-1.81	0.22	1.82	A111
584881.75	1225531.57	87.16	584882.48	1225532.56	86.92	-0.73	-0.99	0.24	1.23	A111
584871.35	1225530.91	87.16	584872.89	1225532.47	86.90	-1.54	-1.56	0.26	2.19	A111
584822.84	1225531.69	87.34	584823.79	1225530.07	87.08	-0.95	1.62	0.26	1.87	A111
584832.54	1225531.76	87.25	584831.06	1225531.76	86.97	1.48	0.00	0.28	1.48	A111
584795.61	1225531.80	87.35	584794.87	1225533.51	87.06	0.74	-1.71	0.29	1.86	A111
584851.15	1225531.46	87.23	584851.08	1225531.62	86.93	0.07	-0.16	0.30	0.17	A111
584862.22	1225573.63	87.31	584864.29	1225572.48	87.30	-2.07	1.15	0.01	2.37	D111
584838.59	1225590.64	87.26	584838.64	1225589.52	87.19	-0.05	1.11	0.07	1.12	D111
584862.85	1225580.24	87.29	584865.04	1225578.21	87.15	-2.19	2.03	0.14	2.99	D111
584863.26	1225593.82	87.27	584863.00	1225595.80	87.13	0.26	-1.98	0.14	1.99	D111
584861.44	1225565.49	87.47	584863.53	1225566.75	87.23	-2.09	-1.26	0.24	2.44	D111

584862.22	1225573.63	87.31	584860.00	1225572.59	87.07	2.22	1.04	0.24	2.45	D111
584862.85	1225580.24	87.29	584860.75	1225578.41	87.02	2.10	1.83	0.27	2.79	D111
584838.70	1225558.87	87.46	584838.55	1225560.04	87.16	0.15	-1.17	0.30	1.18	D111
584863.30	1225587.29	87.43	584862.25	1225589.98	87.12	1.05	-2.69	0.31	2.89	D111
584838.75	1225567.72	87.52	584839.30	1225565.88	87.20	-0.55	1.84	0.32	1.92	D111
584838.66	1225583.06	87.55	584841.55	1225583.34	87.19	-2.89	-0.28	0.36	2.91	D111
569131.56	1218059.31	59.68	569130.03	1218059.80	59.92	1.53	-0.49	-0.24	1.60	F111
569133.34	1218100.83	59.97	569132.89	1218100.12	60.19	0.45	0.71	-0.22	0.84	F111
569133.36	1218093.86	59.99	569134.16	1218095.64	60.18	-0.80	-1.78	-0.19	1.95	F111
569132.47	1218080.26	59.91	569130.46	1218079.36	60.06	2.01	0.90	-0.16	2.20	F111
569132.64	1218038.64	59.60	569134.00	1218040.78	59.72	-1.36	-2.14	-0.12	2.53	F111
569133.34	1218100.83	59.97	569134.74	1218100.73	60.07	-1.40	0.10	-0.10	1.41	F111
569131.80	1218046.02	59.58	569134.61	1218046.05	59.62	-2.81	-0.03	-0.04	2.82	F111
569133.25	1218087.10	59.94	569132.99	1218085.48	59.91	0.26	1.62	0.03	1.64	F111
569132.47	1218080.26	59.91	569132.40	1218080.37	59.87	0.07	-0.11	0.04	0.13	F111
569131.53	1218052.51	59.62	569132.50	1218052.04	59.55	-0.97	0.47	0.07	1.08	F111
569131.86	1218066.29	59.76	569134.35	1218067.89	59.67	-2.49	-1.60	0.09	2.96	F111
569131.80	1218046.02	59.58	569131.88	1218046.71	59.48	-0.08	-0.69	0.10	0.69	F111
569131.56	1218059.31	59.68	569133.12	1218057.32	59.57	-1.56	1.99	0.11	2.53	F111
569131.95	1218073.23	59.82	569129.85	1218074.16	59.67	2.10	-0.93	0.15	2.30	F111
569131.53	1218052.51	59.62	569129.44	1218054.60	59.41	2.09	-2.09	0.21	2.95	F111
569131.86	1218066.29	59.76	569130.63	1218064.94	59.54	1.23	1.35	0.22	1.82	F111

## **CONTROL MARK DATA SHEETS**

AG7391 \*\*\*\*\*

AG7391 TIDAL BM - This is a Tidal Bench Mark.

AG7391 DESIGNATION - 872 6282 A TIDAL

AG7391 PID - AG7391

AG7391 STATE/COUNTY- FL/MANATEE

AG7391 USGS QUAD - ANNA MARIA (1981)

AG7391

AG7391 \*CURRENT SURVEY CONTROL

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AG7391 \* NAD 83(1999)- 27 31 56.86932(N) 082 43 56.29896(W) ADJUSTED

AG7391 \* NAVD 88 - 0.634 (meters) 2.08 (feet) ADJUSTED

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AG7391

AG7391 X	-	715,999.335 (meters)	COMP
AG7391 Y	-	-5,614,364.001 (meters)	COMP
AG7391 Z	-	2,930,649.790 (meters)	COMP

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AG7391 LAPLACE CORR- -1.61 (seconds) DEFLEC99

AG7391 ELLIP HEIGHT- -23.63 (meters) GPS OBS

AG7391 GEOID HEIGHT- -24.15 (meters) GEOID99

AG7391 DYNAMIC HT - 0.633 (meters) 2.08 (feet) COMP

AG7391 MODELED GRAV- 979,148.9 (mgal) NAVD 88

AG7391

AG7391 HORZ ORDER - B

AG7391 VERT ORDER - SECOND CLASS I

AG7391 ELLP ORDER - FIFTH CLASS I

AG7391

AG7391.The horizontal coordinates were established by GPS observations

AG7391.and adjusted by the National Geodetic Survey in May 2001.

AG7391

AG7391.The orthometric height was determined by differential leveling

AG7391.and adjusted by the National Geodetic Survey in June 1991.

AG7391

AG7391.This Tidal Bench Mark is designated as VM 6196

AG7391.by the Center for Operational Oceanographic Products and Services.

AG7391

AG7391.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AG7391

AG7391.The Laplace correction was computed from DEFLEC99 derived deflections.

AG7391

AG7391.The ellipsoidal height was determined by GPS observations

AG7391.and is referenced to NAD 83.

AG7391

AG7391.The geoid height was determined by GEOID99.

AG7391

AG7391.The dynamic height is computed by dividing the NAVD 88

AG7391.geopotential number by the normal gravity value computed on the

AG7391.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AG7391.degrees latitude (g = 980.6199 gals.).

AG7391

AG7391.The modeled gravity was interpolated from observed gravity values.

AG7391

AG7391;	North	East	Units	Scale	Converg.
AG7391;SPC FL W	-	354,615.366	127,663.712	MT	1.00000574 -0 20 18.7
AG7391;UTM 17	-	3,046,608.394	328,930.879	MT	0.99996124 -0 48 03.4

AG7391

AG7391 SUPERSEDED SURVEY CONTROL

AG7391

AG7391 NAD 83(1990)- 27 31 56.86838(N) 082 43 56.29873(W) AD( ) B  
 AG7391 ELLIP HT - -23.61 (m) GP( ) 3 2  
 AG7391  
 AG7391.Superseded values are not recommended for survey control.  
 AG7391.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 AG7391.See file dsdata.txt to determine how the superseded data were derived.  
 AG7391  
 AG7391\_MARKER: DJ = TIDAL STATION DISK  
 AG7391\_SETTING: 30 = CATCH BASIN  
 AG7391\_STAMPING: 6282 A 1976  
 AG7391\_MARK LOGO: NOS  
 AG7391\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 AG7391\_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY  
 AG7391\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 AG7391+SATELLITE: SATELLITE OBSERVATIONS - February 28, 2000  
 AG7391  
 AG7391 HISTORY - Date Condition Report By  
 AG7391 HISTORY - 1976 MONUMENTED NOS  
 AG7391 HISTORY - 1979 GOOD FLDNR  
 AG7391 HISTORY - 1983 GOOD USPSQD  
 AG7391 HISTORY - 1983 GOOD FLDNR  
 AG7391 HISTORY - 20000228 GOOD FLDT  
 AG7391  
 AG7391 STATION DESCRIPTION  
 AG7391  
 AG7391'DESCRIBED BY FL DEPT OF NAT RES 1979  
 AG7391'ANNA MARIA.  
 AG7391'0.3 MILE NORTHWEST ALONG GULF DRIVE (C 789) FROM THE POST OFFICE  
 IN  
 AG7391'ANNA MARIA TO THE JUNCTION OF PINE AVENUE, THENCE 0.5 MILE  
 NORTHEAST  
 AG7391'ALONG PINE AVENUE, 20.3 FEET NORTHWEST OF THE CENTERLINE OF THE  
 AG7391'AVENUE, 151 FEET SOUTHWEST OF THE CENTERLINE OF GAY BOULEVARD,  
 6 FEET  
 AG7391'SOUTH OF A CHAIN LINK FENCE CORNER, AND 33.5 FEET NORTHEAST OF A  
 35  
 AG7391'MPH SPEED LIMIT SIGN POST.  
 AG7391  
 AG7391 STATION RECOVERY (1983)  
 AG7391  
 AG7391'RECOVERY NOTE BY US POWER SQUADRON 1983  
 AG7391'RECOVERED IN GOOD CONDITION.  
 AG7391  
 AG7391 STATION RECOVERY (1983)  
 AG7391  
 AG7391'RECOVERY NOTE BY FL DEPT OF NAT RES 1983  
 AG7391'RECOVERED IN GOOD CONDITION.  
 AG7391  
 AG7391 STATION RECOVERY (2000)  
 AG7391  
 AG7391'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 2000 (CDM)  
 AG7391'RECOVERED AS DESCRIBED.DATASHEETS

AJ7235 \*\*\*\*\*

AJ7235 DESIGNATION - A 518

AJ7235 PID - AJ7235

AJ7235 STATE/COUNTY- FL/HIGHLANDS

AJ7235 USGS QUAD - CHILDS (1972)

AJ7235

AJ7235 \*CURRENT SURVEY CONTROL

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AJ7235\* NAD 83(1999)- 27 12 26.16974(N) 081 19 44.24947(W) ADJUSTED

AJ7235\* NAVD 88 - 41.515 (meters) 136.20 (feet) ADJUSTED

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AJ7235 X - 855,786.517 (meters) COMP

AJ7235 Y - -5,611,556.906 (meters) COMP

AJ7235 Z - 2,898,667.522 (meters) COMP

AJ7235 LAPLACE CORR- -2.53 (seconds) DEFLEC99

AJ7235 ELLIP HEIGHT- 16.48 (meters) (12/09/02) GPS OBS

AJ7235 GEOID HEIGHT- -25.04 (meters) GEOID03

AJ7235 DYNAMIC HT - 41.452 (meters) 136.00 (feet) COMP

AJ7235 MODELED GRAV- 979,136.4 (mgal) NAVD 88

AJ7235

AJ7235 HORZ ORDER - A

AJ7235 VERT ORDER - FIRST CLASS II

AJ7235 ELLP ORDER - FOURTH CLASS I

AJ7235

AJ7235.The horizontal coordinates were established by GPS observations

AJ7235.and adjusted by the National Geodetic Survey in December 2002.

AJ7235

AJ7235.The orthometric height was determined by differential leveling

AJ7235.and adjusted by the National Geodetic Survey in February 2002.

AJ7235

AJ7235.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AJ7235

AJ7235.The Laplace correction was computed from DEFLEC99 derived deflections.

AJ7235

AJ7235.The ellipsoidal height was determined by GPS observations

AJ7235.and is referenced to NAD 83.

AJ7235

AJ7235.The geoid height was determined by GEOID03.

AJ7235

AJ7235.The dynamic height is computed by dividing the NAVD 88

AJ7235.geopotential number by the normal gravity value computed on the

AJ7235.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AJ7235.degrees latitude (g = 980.6199 gals.).

AJ7235

AJ7235.The modeled gravity was interpolated from observed gravity values.

AJ7235

	North	East	Units	Scale Factor	Converg.
AJ7235; SPC FL E	- 318,411.989	167,411.179	MT	0.99995428	-0 09 01.5
AJ7235; UTM 17	- 3,009,435.330	467,422.298	MT	0.99961310	-0 09 01.5

AJ7235

AJ7235! - Elev Factor x Scale Factor = Combined Factor

AJ7235!SPC FL E - 0.99999741 x 0.99995428 = 0.99995169

AJ7235!UTM 17 - 0.99999741 x 0.99961310 = 0.99961051

AJ7235

AJ7235 SUPERSEDED SURVEY CONTROL

AJ7235

AJ7235 NAVD 88 (12/09/02) 41.52 (m) 136.2 (f) LEVELING 3  
 AJ7235  
 AJ7235.Superseded values are not recommended for survey control.  
 AJ7235.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 AJ7235.See file dsdata.txt to determine how the superseded data were derived.  
 AJ7235  
 AJ7235\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RML6742209435(NAD 83)  
 AJ7235\_MARKER: F = FLANGE-ENCASED ROD  
 AJ7235\_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)  
 AJ7235\_STAMPING: A 518 2001 CERP  
 AJ7235\_MARK LOGO: NONE  
 AJ7235\_PROJECTION: RECESSED 3 CENTIMETERS  
 AJ7235\_MAGNETIC: M = MARKER EQUIPPED WITH BAR MAGNET  
 AJ7235\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
 AJ7235\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 AJ7235+SATELLITE: SATELLITE OBSERVATIONS - April 13, 2002  
 AJ7235\_ROD/PIPE-DEPTH: 24.7 meters  
 AJ7235  
 AJ7235 HISTORY - Date Condition Report By  
 AJ7235 HISTORY - 200105 MONUMENTED FOST  
 AJ7235 HISTORY - 20020212 GOOD NGS  
 AJ7235 HISTORY - 20020413 GOOD MAPTEC  
 AJ7235  
 AJ7235 STATION DESCRIPTION  
 AJ7235  
 AJ7235'DESCRIBED BY CHARLEY FOSTER AND ASSOCIATES 2001 (JB)  
 AJ7235'THE MONUMENT IS LOCATED IN BAIRS DEN, FL., 18.25 MILES (29.37 KM)  
 AJ7235'NORTH OF PALMDALE, FL. AND 4.0 MILES  
 AJ7235'(6.44 KM) SOUTH OF LAKE PLACID, FL. IN SECTION 4, TOWNSHIP 38 SOUTH,  
 AJ7235'RANGE 30 EAST.  
 AJ7235'  
 AJ7235'OWNERSHIP IS THE FLORIDA DEPARTMENT OF TRANSPORTATION.  
 AJ7235'  
 AJ7235'TO REACH THE MONUMENT FROM THE INTERSECTION OF STATE ROAD 70  
  
 AJ7235'HIGHWAY 27, IN BAIRS DEN, GO SOUTH ON  
 AJ7235'US HIGHWAY 27 0.05 MILES (0.08 KM) AND MONUMENT IS ON THE WEST  
 (RIGHT)  
 AJ7235'SIDE OF THE ROAD AND ON THE  
 AJ7235'EAST SIDE OF A FENCED IN WELL. THE MONUMENT IS 19.7 MILES (31.70 KM)  
 AJ7235'NORTH OF THE JUNCTION OF STATE  
 AJ7235'ROAD 29 AND US HIGHWAY 27.  
 AJ7235'  
 AJ7235'THE MONUMENT IS 61.5 FEET (18.75 M) WEST OF THE CENTERLINE OF THE  
 AJ7235'SOUTHBOUND LANE OF US HIGHWAY  
 AJ7235'27, 18.2 FEET (5.55 M) NORTHEAST OF THE NORTHEAST CORNER OF WELL  
 AJ7235'FENCE, 41.3 FEET (12.59 M)  
 AJ7235'SOUTHEAST OF A TELEPHONE JUNCTION BOX, 39.1 FEET (11.92 M)  
 SOUTHWEST  
 AJ7235'OF THE THIRD STREET LIGHT  
 AJ7235'POLE SOUTH OF THE INTERSECTION OF STATE ROAD 70 AND US 29 AND 13  
 FEET  
 AJ7235'(3.96 M) EAST OF A CARSONITE  
 AJ7235'WITNESS POST. NOTE NOTE ACCESS TO THE DATUM POINT (THE TOP OF A  
 AJ7235'STAINLESS STEEL ROD) IS HAD  
 AJ7235'THROUGH A 5 INCH LOGO CAP. NOTE A MAGNET WAS PLACED INSIDE THE

PVC  
AJ7235'PIPE.  
AJ7235  
AJ7235 STATION RECOVERY (2002)  
AJ7235  
AJ7235'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2002 (RLT)  
AJ7235'RECOVER AS DESCRIBED  
AJ7235'  
AJ7235'  
AJ7235'  
AJ7235'  
AJ7235  
AJ7235 STATION RECOVERY (2002)  
AJ7235  
AJ7235'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CDP)  
AJ7235'RECOVERED AS DESCRIBED  
AJ7235'



AF7410 \*\*\*\*\*

AF7410 CBN - This is a Cooperative Base Network Control Station.

AF7410 DESIGNATION - ARCPORT

AF7410 PID - AF7410

AF7410 STATE/COUNTY- FL/DE SOTO

AF7410 USGS QUAD - ARCADIA (1988)

AF7410

AF7410 \*CURRENT SURVEY CONTROL

AF7410

AF7410\* NAD 83(1999)- 27 11 34.70393(N) 081 50 30.44732(W) ADJUSTED

AF7410\* NAVD 88 - 17.5 (meters) 57. (feet) GPS OBS

AF7410

AF7410 X - 805,625.780 (meters) COMP

AF7410 Y - -5,619,687.900 (meters) COMP

AF7410 Z - 2,897,247.848 (meters) COMP

AF7410 LAPLACE CORR- -0.83 (seconds) DEFLEC99

AF7410 ELLIP HEIGHT- -7.04 (meters) (05/31/01) GPS OBS

AF7410 GEOID HEIGHT- -24.54 (meters) GEOID03

AF7410

AF7410 HORZ ORDER - B

AF7410 ELLP ORDER - FIFTH CLASS I

AF7410

AF7410.This mark is at Arcadia Airport (X06)

AF7410

AF7410.The horizontal coordinates were established by GPS observations

AF7410.and adjusted by the National Geodetic Survey in May 2001.

AF7410

AF7410.The orthometric height was determined by GPS observations and a

AF7410.high-resolution geoid model.

AF7410

AF7410.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AF7410

AF7410.The Laplace correction was computed from DEFLEC99 derived deflections.

AF7410

AF7410.The ellipsoidal height was determined by GPS observations

AF7410.and is referenced to NAD 83.

AF7410

AF7410.The geoid height was determined by GEOID03.

AF7410

AF7410; North East Units Scale Factor Converg.

AF7410;SPC FL W - 316,795.100 215,675.221 MT 0.99994421 +0 04 20.3

AF7410;UTM 17 - 3,008,089.020 416,622.831 MT 0.99968581 -0 23 05.0

AF7410

AF7410! - Elev Factor x Scale Factor = Combined Factor

AF7410!SPC FL W - 1.00000111 x 0.99994421 = 0.99994532

AF7410!UTM 17 - 1.00000111 x 0.99968581 = 0.99968692

AF7410

AF7410: Primary Azimuth Mark Grid Az

AF7410:SPC FL W - ARCPORT AZ MK 052 18 47.7

AF7410:UTM 17 - ARCPORT AZ MK 052 46 13.0

AF7410

AF7410|-----|

AF7410| PID Reference Object Distance Geod. Az |

AF7410| dddmmss.s |

AF7410| AF7429 ARCPORT AZ MK APPROX. 1.1 KM 0522308.0 |

AF7410|-----|

AF7410  
 AF7410 SUPERSEDED SURVEY CONTROL  
 AF7410  
 AF7410 NAD 83(1990)- 27 11 34.70246(N) 081 50 30.44691(W) AD( ) B  
 AF7410 ELLIP H (09/13/90) -6.97 (m) GP( ) 4 1  
 AF7410 NGVD 29 (09/13/90) 17.8 (m) 58. (f) GPS OBS  
 AF7410  
 AF7410.Superseded values are not recommended for survey control.  
 AF7410.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 AF7410.See file dsdata.txt to determine how the superseded data were derived.  
 AF7410  
 AF7410\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RML1662308089(NAD 83)  
 AF7410\_MARKER: I = METAL ROD  
 AF7410\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)  
 AF7410\_STAMPING: ARCPORT 1989  
 AF7410\_MARK LOGO: NGS  
 AF7410\_PROJECTION: FLUSH  
 AF7410\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 AF7410\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
 AF7410\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 AF7410+SATELLITE: SATELLITE OBSERVATIONS - 1989  
 AF7410\_ROD/PIPE-DEPTH: 12.3 meters  
 AF7410\_SLEEVE-DEPTH : 0.91 meters  
 AF7410  

AF7410 HISTORY	- Date	Condition	Report By
AF7410 HISTORY	- 1989	MONUMENTED	NGS
AF7410 HISTORY	- 19961212	GOOD	USPSQD
AF7410 HISTORY	- 20010727	GOOD	USPSQD

 AF7410  
 AF7410 STATION DESCRIPTION  
 AF7410  
 AF7410'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989  
 AF7410'THE STATION IS LOCATED ABOUT 2.9 KM (1.80 MI) SOUTHEAST OF ARCADIA,  
 AT  
 AF7410'THE ARCADIA MUNICIPAL AIRPORT, BETWEEN RUNWAY 5-23 AND A PAVED  
 AF7410'TAXIWAY, IN THE GRASSY AREA AT THE SOUTHWEST END OF RUNWAY.  
 AF7410'OWNERSHIP--CITY OF ARCADIA, BOX 351, ARCADIA FL 33821, AIRPORT  
 DELETE  
 AF7410'IS BILL MOSS OR ELMER LINDQUIST, PHONE 813-494-3808, 494-1057,  
 AF7410'494-7844. NOTE--PERMISSION MUST BE OBTAINED BEFORE ENTERING  
 AIRPORT.  
 AF7410'TO REACH THE STATION FROM THE JUNCTION OF STATE ROUTE 70 AND U.S.  
 AF7410'HIGHWAY 17, LOCATED AT THE CENTER OF ARCADIA, GO EAST ALONG  
 STATE  
 AF7410'ROUTE 70 FOR 1.6 KM (1.00 MI) TO THE JUNCTION OF AN ASPHALT ROAD  
 AF7410'(AIRPORT ROAD) ON THE RIGHT AND AT A STOPLIGHT, THEN GO RIGHT,  
 SOUTH,  
 AF7410'ALONG AIRPORT ROAD FOR 1.3 KM (0.80 MI) TO THE AIRPORT ACCESS ROAD  
 AF7410'(CARNARHAW AVE.) ON THE LEFT, THEN GO LEFT, EAST ALONG THE AIRPORT  
 AF7410'ACCESS ROAD FOR ABOUT 0.16 KM (0.10 MI) TO ARCADIA MUNICIPAL AIRPORT  
 AF7410'STRAIGHT AHEAD. PASS TO THE NORTH SIDE OF A PAINTED HANGAR AND THEN  
 AF7410'SOUTH THROUGH A METAL GATE AT THE EAST SIDE OF THE HANGAR, THEN GO  
 AF7410'ACROSS COUNTRY ALONG GRASSY AREA SOUTHEAST AND ALONG THE  
 NORTHEAST  
 AF7410'SIDE OF A TURF RUNWAY FOR 0.48 KM (0.30 MI) TO THE JUNCTION OF A PAVED  
 AF7410'TAXIWAY, THEN GO SOUTHWEST ALONG THE PAVED TAXIWAY FOR 0.24 KM

AF7410'(0.15 MI) TO THE STATION, LOCATED BETWEEN THE TAXIWAY AND THE PAVED  
AF7410'RUNWAY.

AF7410'LOCATED 32.3 M (106.0 FT) NORTHWEST OF THE NORTHWEST EDGE OF THE  
AF7410'RUNWAY, 10.5 M (34.4 FT) SOUTHEAST OF THE SOUTHEAST EDGE OF THE  
AF7410'TAXIWAY, 7.4 M (24.3 FT) SOUTHEAST OF A PURPLE TAXI LIGHT AND 13.9 M  
AF7410'(45.6 FT) NORTHEAST OF THE NORTHEAST EDGE OF TAXI APPROACH.

AF7410'DESCRIBED BY G.F. SMITH.

AF7410

AF7410                      STATION RECOVERY (1996)

AF7410

AF7410'RECOVERY NOTE BY US POWER SQUADRON 1996

AF7410'RECOVERED IN GOOD CONDITION.

AF7410

AF7410                      STATION RECOVERY (2001)

AF7410

AF7410'RECOVERY NOTE BY US POWER SQUADRON 2001 (MDB)

AF7410'RECOVERED IN GOOD CONDITION.DATASHEETS

AF7411 \*\*\*\*\*

AF7411 FBN - This is a Federal Base Network Control Station.

AF7411 DESIGNATION - AVONPORT

AF7411 PID - AF7411

AF7411 STATE/COUNTY- FL/HIGHLANDS

AF7411 USGS QUAD - AVON PARK (1987)

AF7411

AF7411 \*CURRENT SURVEY CONTROL

AF7411

AF7411\* NAD 83(1999)- 27 35 29.33351(N) 081 31 35.66386(W) ADJUSTED

AF7411\* NAVD 88 - 46.4 (meters) 152. (feet) GPS OBS

AF7411

AF7411 X - 833,540.582 (meters) COMP

AF7411 Y - -5,595,100.140 (meters) COMP

AF7411 Z - 2,936,467.890 (meters) COMP

AF7411 LAPLACE CORR- -2.69 (seconds) DEFLEC99

AF7411 ELLIP HEIGHT- 20.46 (meters) (04/12/01) GPS OBS

AF7411 GEOID HEIGHT- -25.88 (meters) GEOID03

AF7411

AF7411 HORZ ORDER - A

AF7411 ELLP ORDER - FOURTH CLASS I

AF7411

AF7411.This mark is at Avon Park Airport (AVO)

AF7411

AF7411.The horizontal coordinates were established by GPS observations

AF7411.and adjusted by the National Geodetic Survey in April 2001.

AF7411

AF7411.The orthometric height was determined by GPS observations and a

AF7411.high-resolution geoid model.

AF7411

AF7411.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AF7411

AF7411.The Laplace correction was computed from DEFLEC99 derived deflections.

AF7411

AF7411.The ellipsoidal height was determined by GPS observations

AF7411.and is referenced to NAD 83.

AF7411

AF7411.The geoid height was determined by GEOID03.

AF7411

AF7411; North East Units Scale Factor Converg.

AF7411;SPC FL E - 361,051.844 148,013.890 MT 0.99997452 -0 14 38.0

AF7411;SPC FL W - 361,030.636 246,739.125 MT 0.99996813 +0 13 09.4

AF7411;UTM 17 - 3,052,060.636 448,031.627 MT 0.99963334 -0 14 38.0

AF7411

AF7411! - Elev Factor x Scale Factor = Combined Factor

AF7411!SPC FL E - 0.99999679 x 0.99997452 = 0.99997131

AF7411!SPC FL W - 0.99999679 x 0.99996813 = 0.99996492

AF7411!UTM 17 - 0.99999679 x 0.99963334 = 0.99963013

AF7411

AF7411: Primary Azimuth Mark Grid Az

AF7411:SPC FL E - AVONPORT AZ MK 225 28 12.3

AF7411:SPC FL W - AVONPORT AZ MK 225 00 24.9

AF7411:UTM 17 - AVONPORT AZ MK 225 28 12.3

AF7411

AF7411|-----|

AF7411|PID Reference Object Distance Geod. Az |

AF7411| dddmmss.s |  
 AF7411| AF7434 AVONPORT AZ MK APPROX. 0.7 KM 2251334.3 |  
 AF7411|-----|  
 AF7411  
 AF7411 SUPERSEDED SURVEY CONTROL  
 AF7411  
 AF7411 NAD 83(1990)- 27 35 29.33258(N) 081 31 35.66362(W) AD( ) B  
 AF7411 ELLIP H (09/13/90) 20.42 (m) GP( ) 4 1  
 AF7411 NGVD 29 (09/13/90) 46.6 (m) 153. (f) GPS OBS  
 AF7411  
 AF7411.Superseded values are not recommended for survey control.  
 AF7411.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 AF7411.See file dsdata.txt to determine how the superseded data were derived.  
 AF7411  
 AF7411\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RML4803252061(NAD 83)  
 AF7411\_MARKER: F = FLANGE-ENCASED ROD  
 AF7411\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)   
 AF7411\_STAMPING: AVONPORT 1989  
 AF7411\_MARK LOGO: NGS  
 AF7411\_PROJECTION: FLUSH  
 AF7411\_MAGNETIC: I = MARKER IS A STEEL ROD  
 AF7411\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
 AF7411\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 AF7411+SATELLITE: SATELLITE OBSERVATIONS - October 02, 2003  
 AF7411\_ROD/PIPE-DEPTH: 40.2 meters  
 AF7411\_SLEEVE-DEPTH : 0.9 meters  
 AF7411  

AF7411 HISTORY	- Date	Condition	Report By
AF7411 HISTORY	- 1989	MONUMENTED	NGS
AF7411 HISTORY	- 19910501	GOOD	KEISCH
AF7411 HISTORY	- 19920714	GOOD	KEISCH
AF7411 HISTORY	- 19951229	GOOD	NGS
AF7411 HISTORY	- 19990405	GOOD	FLDT
AF7411 HISTORY	- 20030403	GOOD	FLDEP
AF7411 HISTORY	- 20031002	GOOD	FL-105

 AF7411  
 AF7411 STATION DESCRIPTION  
 AF7411  
 AF7411'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989  
 AF7411'THE STATION IS LOCATED ABOUT 2.09 KM (1.30 MI) WEST-SOUTHWEST OF AVON  
 AF7411'PARK, AT THE AVON PARK MUNICIPAL AIRPORT, IN SECTION 21, T 33 S, R 28  
 AF7411'E, BETWEEN RUNWAY 04-22 AND PARALLEL TAXIWAY, ON THE SOUTHWEST SIDE  
 AF7411'A NORTHWEST-SOUTHEAST TAXIWAY. OWNERSHIP--CITY OF AVON PARK, 110 E.  
 AF7411'MAIN ST, AVON PARK FL 33825, DAVID HEACOCK - CITY MANAGER, PHONE  
 AF7411'813-452-2221. NOTE--PERMISSION MUST BE OBTAINED BEFORE ENTERING  
 AF7411'AIRPORT.  
 AF7411'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 27, 98 AND  
 AF7411'STATE ROADS 17 AND 64 ON THE WEST SIDE OF AVON PARK, GO WEST FOR 1.13  
 AF7411'KM (0.70 MI) ON STATE ROAD 64 TO A PAVED ROAD LEFT. TURN LEFT AND GO  
 AF7411'SOUTH FOR 0.07 KM (0.05 MI) ON THE PAVED ROAD TO A T-JUNCTION. TURN  
 AF7411'LEFT AND GO EAST FOR 50 M (164.0 FT) ON THE PAVED ROAD TO AN ASPHALT  
 AF7411'APRON ON RIGHT. TURN RIGHT AND GO SOUTH, THEN SOUTHEAST FOR 0.15 KM  
 AF7411'(0.10 MI) ON THE APRON AND TAXIWAY TO THE RUNWAY EDGE. CONTINUE AHEAD  
 AF7411'FOR 0.10 KM (0.05 MI) ACROSS RUNWAYS AND ON TAXIWAY TO A CURVE RIGHT.  
 AF7411'BEAR RIGHT AND GO SOUTHWEST FOR 0.22 KM (0.15 MI) ON THE TAXIWAY TO A  
 AF7411'CROSS TAXIWAY. TURN RIGHT AND GO NORTHWEST FOR ABOUT 45 M (147.6 FT)

AF7411'ON THE TAXIWAY TO THE STATION ON LEFT.  
 AF7411'THE STATION IS RECESSED 9 CM BELOW GROUND. LOCATED 48.83 M  
 AF7411'(160.2 FT) NORTHWEST FROM THE APPROXIMATE CENTER OF A  
 AF7411'NORTHEAST-SOUTHWEST TAXIWAY, 42.58 M (139.7 FT) SOUTHEAST FROM THE  
 AF7411'APPROXIMATE CENTER OF RUNWAY 04-22, 27.74 M (91.0 FT) SOUTH-SOUTHEAST  
 AF7411'FROM A SIGN (A), 26.88 SOUTHWEST FROM THE APPROXIMATE CENTER OF A  
 AF7411'NORTHWEST-SOUTHEAST TAXIWAY, 17.22 M (56.5 FT) SOUTHWEST FROM THE  
 AF7411'SOUTH CORNER OF A 0.61 M (2.0 FT) BY 1.83 M (6.0 FT) CONCRETE BASE FOR  
 AF7411'SIGN (4-22) AND 12.50 M (41.0 FT) NORTHWEST FROM THE NORTHWEST EDGE OF  
 AF7411'A DRAINAGE DITCH. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH  
 AF7411'LOGO CAP.  
 AF7411'DESCRIBED BY D.F. CALLAHAN.  
 AF7411  
 AF7411 STATION RECOVERY (1991)  
 AF7411  
 AF7411'RECOVERY NOTE BY KEITH AND SCHNARS - LAKELAND 1991  
 AF7411'RECOVERED IN GOOD CONDITION.  
 AF7411  
 AF7411 STATION RECOVERY (1992)  
 AF7411  
 AF7411'RECOVERY NOTE BY KEITH AND SCHNARS - LAKELAND 1992  
 AF7411'RECOVERED IN GOOD CONDITION.  
 AF7411  
 AF7411 STATION RECOVERY (1995)  
 AF7411  
 AF7411'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (CFS)  
 AF7411'THE STATION IS LOCATED ABOUT 1.30 MI (2.09 KM) WEST-SOUTHWEST OF AVON  
 AF7411'PARK, AT THE AVON PARK MUNICIPAL AIRPORT, IN SECTION 21, T 33 S, R 28  
 AF7411'E, BETWEEN RUNWAY 4-22 AND PARALLEL TAXIWAY, ON THE SOUTHWEST SIDE OF  
 AF7411'A NORTHWEST-SOUTHEAST TAXIWAY. OWNERSHIP -- CITY OF AVON PARK, 110 E.  
 AF7411'MAIN ST, AVON PARK, FL 33825. SUSAN BOYER, CITY MANAGER/AIRPORT  
 AF7411'MANAGER, PHONE 941-452-4400. NOTE -- PERMISSION MUST BE OBTAINED  
 AF7411'BEFORE ENTERING AIRPORT. TO REACH THE STATION FROM THE JUNCTION OF U.  
 AF7411'S. HIGHWAY 27, 98 AND STATE ROADS 17 AND 64 ON THE WEST SIDE OF AVON  
 AF7411'PARK, GO WEST FOR 0.70 MI (1.13 KM) ON STATE ROAD 64 TO A PAVED ROAD  
 AF7411'LEFT. TURN LEFT AND GO SOUTH FOR 0.05 MI,PASSING THROUGH GATE, ON  
 AF7411'PAVED ROAD TO A T-JUNCTION. TURN LEFT AND GO EAST ON THE PAVED ROAD  
 AF7411'FOR 164.0 FT (50.0 M) TO AN ASPHALT APRON ON THE RIGHT. TURN RIGHT  
 AF7411'AND GO SOUTH, THEN SOUTHEAST FOR 0.10 MI (0.16 KM) ON THE APRON AND  
 AF7411'TAXIWAY TO THE RUNWAY EDGE. CONTINUE AHEAD FOR 0.05 MI (0.08 KM)  
 AF7411'ACROSS RUNWAY AND ONTO TAXIWAY TO A CURVE RIGHT. BEAR RIGHT AND GO  
 AF7411'SOUTHWEST FOR 0.15 MI (0.24 KM) ON THE TAXIWAY TO A CROSS TAXIWAY.  
 AF7411'TURN RIGHT AND GO NORTHWEST FOR ABOUT 147.6 FT (45.0 M) ON THE TAXIWAY  
 AF7411'TO THE STATION ON THE LEFT. THE STATION IS RECESSED 9 CM BELOW  
 AF7411'GROUND. LOCATED 160.2 FT (48.8 M) NORTHWEST FROM THE APPROXIMATE  
 AF7411'CENTER OF A NORTHEAST-SOUTHWEST TAXIWAY, 139.7 FT (42.6 M) SOUTHEAST  
 AF7411'FROM THE APPROXIMATE CENTER OF RUNWAY 4-22, 91.0 FT (27.7 M)  
 AF7411'SOUTH-SOUTHEAST FROM TAXIWAY SIGN (A), 88.0 FT (26.8 M) SOUTHWEST FROM  
 AF7411'THE APPROXIMATE CENTER OF TAXIWAY A, 56.5 FT (17.2 M) SOUTHWEST FROM  
 AF7411'THE SOUTH CORNER OF A CONCRETE BASE FOR RUNWAY SIGN 4-22, 41.0 FT  
 AF7411'(12.5 M) NORTHWEST FROM THE NORTHWEST EDGE OF A DRAINAGE DITCH, AND  
 AF7411'3.0 FT (0.9 M) NORTHWEST OF A CARSONITE WITNESS POST. NOTE -- ACCESS  
 AF7411'TO DATUM POINT IS THROUGH A 5-INCH LOGO CAP.  
 AF7411  
 AF7411 STATION RECOVERY (1999)  
 AF7411

AF7411'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1999  
AF7411'RECOVERED AS DESCRIBED.  
AF7411  
AF7411                      STATION RECOVERY (2003)  
AF7411  
AF7411'RECOVERY NOTE BY FL DEPT OF ENV PRO 2003 (BPJ)  
AF7411'RECOVERED AS DESCRIBED.  
AF7411'  
AF7411'NOTE PHONE CURRENT AIRPORT CONTACT IS GEORGE POPE OR ANDREW HUGHES  
AF7411'863-453-5046.  
AF7411'  
AF7411  
AF7411                      STATION RECOVERY (2003)  
AF7411  
AF7411'RECOVERY NOTE BY POLK COUNTY FLORIDA 2003 (RWY)  
AF7411'RECOVERED AS DESCRIBED. RECOVERY NOTE BY POLK COUNTY PROPERTY  
AF7411'APPRAISER GIS DEPARTMENT.

DF7046 \*\*\*\*\*  
 DF7046 CORS - This is a GPS Continuously Operating Reference Station.  
 DF7046 DESIGNATION - BARTOW CORS ARP  
 DF7046 CORS\_ID - BRTW  
 DF7046 PID - DF7046  
 DF7046 STATE/COUNTY- FL/POLK  
 DF7046 USGS QUAD - BARTOW (1987)  
 DF7046  
 DF7046 \*CURRENT SURVEY CONTROL  
 DF7046 \_\_\_\_\_  
 DF7046\* NAD 83(CORS)- 27 56 58.64223(N) 081 46 58.20127(W) ADJUSTED  
 DF7046\* NAVD 88 -  
 DF7046 \_\_\_\_\_  
 DF7046 EPOCH DATE - 2002.00  
 DF7046 X - 805,863.934 (meters) COMP  
 DF7046 Y - -5,580,464.273 (meters) COMP  
 DF7046 Z - 2,971,581.211 (meters) COMP  
 DF7046 ELLIP HEIGHT- 13.57 (meters) (08/??/03) GPS OBS  
 DF7046 GEOID HEIGHT- -26.20 (meters) GEOID03  
 DF7046  
 DF7046 HORZ ORDER - SPECIAL (CORS)  
 DF7046 ELLP ORDER - SPECIAL (CORS)  
 DF7046  
 DF7046. ITRF positions are available for this station.  
 DF7046. The coordinates were established by GPS observations  
 DF7046. and adjusted by the National Geodetic Survey in August 2003..  
 DF7046. The coordinates are valid at the epoch date displayed above.  
 DF7046. The epoch date for horizontal control is a decimal equivalence  
 DF7046. of Year/Month/Day.  
 DF7046  
 DF7046  
 DF7046. The PID for the CORS L1 Phase Center is DF7047.  
 DF7046  
 DF7046. The XYZ, and position/ellipsoidal ht. are equivalent.  
 DF7046  
 DF7046. The ellipsoidal height was determined by GPS observations  
 DF7046. and is referenced to NAD 83.  
 DF7046  
 DF7046. The geoid height was determined by GEOID03.  
 DF7046  
 DF7046; North East Units Scale Factor Converg.  
 DF7046; SPC FL W - 400,645.547 221,369.582 MT 0.99994681 +0 06 06.4  
 DF7046; SPC FL W - 1,314,451.27 726,276.70 sFT 0.99994681 +0 06 06.4  
 DF7046  
 DF7046! - Elev Factor x Scale Factor = Combined Factor  
 DF7046! SPC FL W - 0.99999787 x 0.99994681 = 0.99994468  
 DF7046  
 DF7046 SUPERSEDED SURVEY CONTROL  
 DF7046  
 DF7046. No superseded survey control is available for this station.  
 DF7046  
 DF7046\_ U.S. NATIONAL GRID SPATIAL ADDRESS: 17RML2299391868(NAD 83)  
 DF7046\_ MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA  
 DF7046  
 DF7046 STATION DESCRIPTION  
 DF7046



DF7046'DESCRIBED BY NATIONAL GEODETIC SURVEY 2003  
DF7046'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND  
DF7046'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE  
DF7046'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.  
DF7046' FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION\_LOG  
DF7046' HTTP://WWW.NGS.NOAA.GOV UNDER PRODUCTS AND SERVICES.

AG9371 \*\*\*\*\*

AG9371 CBN - This is a Cooperative Base Network Control Station.

AG9371 DESIGNATION - FLGPS 46

AG9371 PID - AG9371

AG9371 STATE/COUNTY- FL/HILLSBOROUGH

AG9371 USGS QUAD - FT LONESOME (1987)

AG9371

AG9371 \*CURRENT SURVEY CONTROL

AG9371

AG9371\* NAD 83(1999)- 27 42 16.54254(N) 082 09 17.10287(W) ADJUSTED

AG9371\* NAVD 88 - 35.14 (meters) 115.3 (feet) N HEIGHT

AG9371

AG9371 X - 771,353.179 (meters) COMP

AG9371 Y - -5,598,131.455 (meters) COMP

AG9371 Z - 2,947,566.509 (meters) COMP

AG9371 LAPLACE CORR- -0.85 (seconds) DEFLEC99

AG9371 ELLIP HEIGHT- 10.34 (meters) GPS OBS

AG9371 GEOID HEIGHT- -24.92 (meters) GEOID99

AG9371 DYNAMIC HT - 35.09 (meters) 115.1 (feet) COMP

AG9371 MODELED GRAV- 979,163.1 (mgal) NAVD 88

AG9371

AG9371 HORZ ORDER - A

AG9371 VERT ORDER - THIRD

AG9371 ELLP ORDER - FOURTH CLASS I

AG9371

AG9371.The horizontal coordinates were established by GPS observations

AG9371.and adjusted by the National Geodetic Survey in April 2001.

AG9371

AG9371.The orthometric height was determined by differential leveling

AG9371.and adjusted by the National Geodetic Survey in May 2001.

AG9371.WARNING-GPS observations at this control monument resulted in a GPS

AG9371.derived orthometric height which differed from the leveled height by

AG9371.more than one decimeter (0.1 meter).

AG9371

AG9371.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AG9371

AG9371.The Laplace correction was computed from DEFLEC99 derived deflections.

AG9371

AG9371.The ellipsoidal height was determined by GPS observations

AG9371.and is referenced to NAD 83.

AG9371

AG9371.The geoid height was determined by GEOID99.

AG9371

AG9371.The dynamic height is computed by dividing the NAVD 88

AG9371.geopotential number by the normal gravity value computed on the

AG9371.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AG9371.degrees latitude (g = 980.6199 gals.).

AG9371

AG9371.The modeled gravity was interpolated from observed gravity values.

AG9371

AG9371; North East Units Scale Conver.

AG9371;SPC FL W - 373,484.593 184,738.002 MT 0.99994405 -0 04 19.0

AG9371;UTM 17 - 3,065,012.998 386,149.466 MT 0.99975999 -0 32 12.9

AG9371

AG9371 SUPERSEDED SURVEY CONTROL

AG9371

AG9371 NAD 83(1990)- 27 42 16.54175(N) 082 09 17.10252(W) AD( ) 1

AG9371 NGVD 29 - 35.5 (m) 116. (f) GPS OBS

AG9371

AG9371.Superseded values are not recommended for survey control.

AG9371.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AG9371.See file dsdata.txt to determine how the superseded data were derived.

AG9371

AG9371\_MARKER: F = FLANGE-ENCASED ROD

AG9371\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)

AG9371\_STAMPING: FLGPS 46 1989

AG9371\_MARK LOGO: NGS

AG9371\_PROJECTION: FLUSH

AG9371\_MAGNETIC: N = NO MAGNETIC MATERIAL

AG9371\_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD

AG9371+STABILITY: POSITION/ELEVATION WELL

AG9371\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AG9371+SATELLITE: SATELLITE OBSERVATIONS - April 05, 1999

AG9371\_ROD/PIPE-DEPTH: 7.3 meters

AG9371\_SLEEVE-DEPTH : 0.91 meters

AG9371

AG9371 HISTORY - Date Condition Report By

AG9371 HISTORY - 1989 MONUMENTED NGS

AG9371 HISTORY - 19901102 GOOD FLDNR

AG9371 HISTORY - 19990405 GOOD DCJOHN

AG9371

AG9371 STATION DESCRIPTION

AG9371

AG9371'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989

AG9371'THE STATION IS LOCATED ABOUT 34.44 KM (21.40 MI) SOUTH OF PLANT CITY,

AG9371'13.84 KM (8.60 MI) EAST OF WIMAUMA, IN SECTION 12, T 32 S, R 21 E.

AG9371'OWNERSHIP--STATE ROAD RIGHT-OF-WAY.

AG9371'TO REACH THE STATION FROM THE INTERSECTION OF COUNTY ROAD 39 AND  
STATE

AG9371'ROAD 674 IN FORT LONESOME, GO WEST FOR 0.89 KM (0.55 MI) ON STATE ROAD

AG9371'674 TO THE STATION ON RIGHT.

AG9371'THE STATION IS RECESSED 8 CM BELOW GROUND. LOCATED 20.03 M (65.7 FT)

AG9371'EAST FROM A CONCRETE RIGHT-OF-WAY MONUMENT, 19.51 M (64.0 FT) EAST

AG9371'FROM A UTILITY POLE, 13.26 M (43.5 FT) NORTH FROM THE APPROXIMATE

AG9371'CENTER OF STATE ROAD 674, 2.59 M (8.5 FT) SOUTH FROM A FENCE LINE AND

AG9371'2.29 M (7.5 FT) SOUTH FROM A CARSONITE WITNESS POST. NOTE--ACCESS TO

AG9371'DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.

AG9371'DESCRIBED BY R.L. MALLOY.

AG9371

AG9371 STATION RECOVERY (1990)

AG9371

AG9371'RECOVERY NOTE BY FL DEPT OF NAT RES 1990

AG9371'THE STATION IS ABOUT 21.4 MI (34.4 KM) SOUTH OF PLANT CITY, 8.6 MI

AG9371'(13.8 KM) EAST OF WINAUMA, IN FORT LONESOME, IN SECTION 12, T 32 S, R

AG9371'21 E.

AG9371'TO REACH THE STATION FROM THE INTERSECTION OF COUNTY ROAD 39 AND  
STATE

AG9371'ROAD 674, GO WEST ON STATE ROAD 674 FOR 0.55 MI (0.89 KM) TO THE

AG9371'STATION ON THE RIGHT. RECESSED 0.3 FT (9.1 CM) BELOW THE GROUND.

AG9371'LOCATED 65.2 FT (19.9 M) EAST OF A CONCRETE RIGHT-OF-WAY MARKER, 63.6

AG9371'FT (19.4 M) EAST OF A POWER POLE NUMBER 14 3755, 44.0 FT (13.4 M)

AG9371'NORTH OF THE CENTERLINE OF STATE ROAD 674, 8.1 FT (2.5 M) SOUTH OF A

AG9371'FENCE LINE AND 7.5 FT (2.3 M) NORTH OF A CARSONITE WITNESS POST.  
AG9371'NOTE ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.  
AG9371

AG9371 STATION RECOVERY (1999)

AG9371

AG9371'RECOVERY NOTE BY DC JOHNSON ASSOC 1999

AG9371'RECOVERED IN GOOD CONDITION WITH THIS CHANGE, THE STATION IS 7.5 FT

AG9371'(2.3 M) SOUTH OF A CARSONITE WITNESS POST.DATASHEETS

AG9363 \*\*\*\*\*

AG9363 CBN - This is a Cooperative Base Network Control Station.

AG9363 DESIGNATION - FLGPS 49

AG9363 PID - AG9363

AG9363 STATE/COUNTY- FL/MANATEE

AG9363 USGS QUAD - MYAKKA CITY (1972)

AG9363

AG9363 \*CURRENT SURVEY CONTROL

AG9363

AG9363\* NAD 83(1999)- 27 20 16.06691(N) 082 08 28.36289(W) ADJUSTED

AG9363\* NAVD 88 - 14.209 (meters) 46.62 (feet) ADJUSTED

AG9363

AG9363 X - 775,241.504 (meters) COMP

AG9363 Y - -5,616,535.923 (meters) COMP

AG9363 Z - 2,911,510.897 (meters) COMP

AG9363 LAPLACE CORR- -0.40 (seconds) DEFLEC99

AG9363 ELLIP HEIGHT- -10.24 (meters) (05/31/01) GPS OBS

AG9363 GEOID HEIGHT- -24.59 (meters) GEOID03

AG9363 DYNAMIC HT - 14.188 (meters) 46.55 (feet) COMP

AG9363 MODELED GRAV- 979,128.1 (mgal) NAVD 88

AG9363

AG9363 HORZ ORDER - B

AG9363 VERT ORDER - SECOND CLASS I

AG9363 ELLP ORDER - FIFTH CLASS I

AG9363

AG9363.The horizontal coordinates were established by GPS observations

AG9363.and adjusted by the National Geodetic Survey in May 2001.

AG9363

AG9363.The orthometric height was determined by differential leveling

AG9363.and adjusted by the National Geodetic Survey in May 2004.

AG9363.No vertical observational check was made to the station.

AG9363

AG9363.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AG9363

AG9363.The Laplace correction was computed from DEFLEC99 derived deflections.

AG9363

AG9363.The ellipsoidal height was determined by GPS observations

AG9363.and is referenced to NAD 83.

AG9363

AG9363.The geoid height was determined by GEOID03.

AG9363

AG9363.The dynamic height is computed by dividing the NAVD 88

AG9363.geopotential number by the normal gravity value computed on the

AG9363.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AG9363.degrees latitude (g = 980.6199 gals.).

AG9363

AG9363.The modeled gravity was interpolated from observed gravity values.

AG9363

AG9363; North East Units Scale Factor Converg.

AG9363;SPC FL W - 332,839.684 186,026.964 MT 0.99994359 -0 03 53.5

AG9363;UTM 17 - 3,024,366.543 387,110.380 MT 0.99975731 -0 31 26.9

AG9363

AG9363! - Elev Factor x Scale Factor = Combined Factor

AG9363!SPC FL W - 1.00000161 x 0.99994359 = 0.99994520

AG9363!UTM 17 - 1.00000161 x 0.99975731 = 0.99975892

AG9363

AG9363: Primary Azimuth Mark Grid Az  
AG9363:SPC FL W - FLGPS 49 AZ MK 293 22 08.7  
AG9363:UTM 17 - FLGPS 49 AZ MK 293 49 42.1  
AG9363  
AG9363|-----|  
AG9363| PID Reference Object Distance Geod. Az |  
AG9363| dddmmss.s |  
AG9363| AG9374 FLGPS 49 AZ MK APPROX. 0.8 KM 2931815.2 |  
AG9363|-----|  
AG9363  
AG9363 SUPERSEDED SURVEY CONTROL  
AG9363 AG9363 NAD 83(1990)- 27 20 16.06547(N) 082 08 28.36245(W) AD( ) B  
AG9363 ELLIP H (09/13/90) -10.13 (m) GP( ) 4 1  
AG9363 NGVD 29 (09/13/90) 14.6 (m) 48. (f) GPS OBS  
AG9363  
AG9363.Superseded values are not recommended for survey control.  
AG9363.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
AG9363.See file dsdata.txt to determine how the superseded data were derived.  
AG9363  
AG9363\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLL8711024367(NAD 83)  
AG9363\_MARKER: F = FLANGE-ENCASED ROD  
AG9363\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)   
AG9363\_STAMPING: FLGPS 49 1989  
AG9363\_MARK LOGO: NGS  
AG9363\_PROJECTION: FLUSH  
AG9363\_MAGNETIC: N = NO MAGNETIC MATERIAL  
AG9363\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
AG9363\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
AG9363+SATELLITE: SATELLITE OBSERVATIONS - April 20, 2002  
AG9363\_ROD/PIPE-DEPTH: 24.4 meters  
AG9363\_SLEEVE-DEPTH : 0.9 meters  
AG9363  
AG9363 HISTORY - Date Condition Report By  
AG9363 HISTORY - 1989 MONUMENTED NGS  
AG9363 HISTORY - 20020420 GOOD FLDEP  
AG9363  
AG9363 STATION DESCRIPTION  
AG9363  
AG9363'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989  
AG9363'THE STATION IS LOCATED ABOUT 41.04 KM (25.50 MI) SOUTHWEST OF  
AG9363'WAUCHULA, 2.74 KM (1.70 MI) SOUTHEAST OF MYAKKA CITY, IN SECTION 19, T  
AG9363'36 S, R 22 E. OWNERSHIP--STATE ROAD RIGHT-OF-WAY.  
AG9363'TO REACH THE STATION FROM THE INTERSECTION OF STATE ROAD 70 AND THE  
AG9363'WAUCHULA-MYAKKA ROAD IN MYAKKA CITY, GO EAST FOR 2.33 KM (1.45 MI) ON  
AG9363'STATE ROAD 70 TO THE STATION ON LEFT.  
AG9363'THE STATION IS RECESSED 10 CM BELOW GROUND. LOCATED 14.63 M  
AG9363'(48.0 FT) NORTH-NORTHEAST FROM THE APPROXIMATE CENTER OF STATE ROAD  
AG9363'70, 6.22 M (20.4 FT) SOUTH-SOUTHWEST FROM A FENCE LINE, 6.22 M  
AG9363'(20.4 FT) SOUTHWEST FROM A CARSONITE WITNESS POST AND 6.10 M  
AG9363'(20.0 FT) SOUTH-SOUTHWEST FROM AT+T WITNESS POST NUMBER 537.  
AG9363'NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.  
AG9363'DESCRIBED BY R.L. MALLOY.  
AG9363  
AG9363 STATION RECOVERY (2002)  
AG9363  
AG9363'RECOVERY NOTE BY FL DEPT OF ENV PRO 2002 (BPJ)

AG9363'THE MARK IS ABOUT 1.6 MI SOUTHEAST OF MYAKKA CITY, IN SECTION 19,  
AG9363'TOWNSHIP 36 SOUTH,  
AG9363'RANGE 22 EAST.  
AG9363'  
AG9363'TO REACH THE STATION FROM THE POST OFFICE IN MYAKKA CITY, GO EAST ON  
AG9363'STATE ROAD 70 FOR  
AG9363'1.7 MI TO THE STATION ON THE LEFT, A STAINLESS STEEL ROD IN A SLEEVE  
AG9363'DRIVEN TO REFUSAL AT A  
AG9363'DEPTH OF 80.0 FT WITH AN NGS LOGO CAP FLUSH WITH THE GROUND AND ABOUT  
AG9363'1.0 FT BELOW THE  
AG9363'LEVEL OF STATE ROAD 70, THE DATUM POINT IS RECESSED 0.3 FT BELOW THE  
AG9363'LEVEL OF THE NGS  
AG9363'LOGO CAP.  
AG9363'  
AG9363'LOCATED 48.0 FT NORTH-NORTHEAST OF THE APPROXIMATE CENTERLINE OF  
STATE  
AG9363'ROAD 70, 35.3 FT  
AG9363'NORTH-NORTHEAST OF THE EDGE OF THE PAVEMENT OF STATE ROAD 70, 20.4 FT  
AG9363'SOUTH-SOUTHWEST OF A BARB WIRE FENCE, 20.4 FT SOUTH-SOUTHWEST OF A  
AG9363'CARSONITE WITNESS  
AG9363'POST AND 20.0 FT SOUTH-SOUTHWEST FROM AN ATT FIBER OPTIC CABLE  
WARNING  
AG9363'POST NUMBER  
AG9363'537.  
AG9363'  
AG9363'NOTE ACCESS TO THE DATUM POINT IS HAD THROUGH A 5-INCH NGS LOGO CAP.



AD7896 \*\*\*\*\*

AD7896 CBN - This is a Cooperative Base Network Control Station.

AD7896 DESIGNATION - FLGPS 58

AD7896 PID - AD7896

AD7896 STATE/COUNTY- FL/CHARLOTTE

AD7896 USGS QUAD - TELEGRAPH SWAMP NE (1973)

AD7896

AD7896 \*CURRENT SURVEY CONTROL

AD7896

AD7896\* NAD 83(1999)- 26 56 42.27004(N) 081 36 47.88968(W) ADJUSTED

AD7896\* NAVD 88 - 17.2 (meters) 56. (feet) GPS OBS

AD7896

AD7896 X - 829,853.019 (meters) COMP

AD7896 Y - -5,628,796.423 (meters) COMP

AD7896 Z - 2,872,788.428 (meters) COMP

AD7896 LAPLACE CORR- -0.39 (seconds) DEFLEC99

AD7896 ELLIP HEIGHT- -7.25 (meters) (04/12/01) GPS OBS

AD7896 GEOID HEIGHT- -24.44 (meters) GEOID03

AD7896

AD7896 HORZ ORDER - A

AD7896 ELLP ORDER - FOURTH CLASS I

AD7896

AD7896.The horizontal coordinates were established by GPS observations

AD7896.and adjusted by the National Geodetic Survey in April 2001.

AD7896

AD7896.The orthometric height was determined by GPS observations and a

AD7896.high-resolution geoid model.

AD7896

AD7896.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AD7896

AD7896.The Laplace correction was computed from DEFLEC99 derived deflections.

AD7896

AD7896.The ellipsoidal height was determined by GPS observations

AD7896.and is referenced to NAD 83.

AD7896

AD7896.The geoid height was determined by GEOID03.

AD7896

AD7896; North East Units Scale Factor Converg.

AD7896;SPC FL W - 289,377.268 238,398.143 MT 0.99995937 +0 10 30.8

AD7896;UTM 17 - 2,980,499.467 439,120.833 MT 0.99964575 -0 16 40.5

AD7896

AD7896! - Elev Factor x Scale Factor = Combined Factor

AD7896!SPC FL W - 1.00000114 x 0.99995937 = 0.99996051

AD7896!UTM 17 - 1.00000114 x 0.99964575 = 0.99964689

AD7896

AD7896: Primary Azimuth Mark Grid Az

AD7896:SPC FL W - FLGPS 58 AZ MK 269 57 32.9

AD7896:UTM 17 - FLGPS 58 AZ MK 270 24 44.2

AD7896

AD7896|-----|

AD7896| PID Reference Object Distance Geod. Az |

AD7896| dddmmss.s |

AD7896| AD7922 FLGPS 58 AZ MK APPROX. 0.9 KM 2700803.7 |

AD7896|-----|

AD7896

AD7896 SUPERSEDED SURVEY CONTROL

AD7896  
AD7896 ELLIP H (06/02/94) -7.22 (m) GP( ) 3 1  
AD7896 NAD 83(1990)- 26 56 42.26839(N) 081 36 47.88891(W) AD( ) B  
AD7896 ELLIP H (09/13/90) -7.27 (m) GP( ) 4 1  
AD7896 NGVD 29 (09/13/90) 17.5 (m) 57. (f) GPS OBS  
AD7896  
AD7896.Superseded values are not recommended for survey control.  
AD7896.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
AD7896.See file dsdata.txt to determine how the superseded data were derived.  
AD7896  
AD7896\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMK3912180499(NAD 83)  
AD7896\_MARKER: F = FLANGE-ENCASED ROD  
AD7896\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)  
AD7896\_STAMPING: FLGPS 58 1989  
AD7896\_MARK LOGO: NGS  
AD7896\_PROJECTION: FLUSH  
AD7896\_MAGNETIC: N = NO MAGNETIC MATERIAL  
AD7896\_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD  
AD7896+STABILITY: POSITION/ELEVATION WELL  
AD7896\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
AD7896+SATELLITE: SATELLITE OBSERVATIONS - April 05, 1999  
AD7896\_ROD/PIPE-DEPTH: 17.2 meters  
AD7896\_SLEEVE-DEPTH : 0.91 meters  
AD7896  
AD7896 HISTORY - Date Condition Report By  
AD7896 HISTORY - 1989 MONUMENTED NGS  
AD7896 HISTORY - 19920921 GOOD DENI  
AD7896 HISTORY - 19930303 GOOD NGS  
AD7896 HISTORY - 19990405 GOOD FL-015  
AD7896  
AD7896 STATION DESCRIPTION  
AD7896  
AD7896'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989  
AD7896'THE STATION IS LOCATED ABOUT 14.3 KM (8.90 MI) EAST OF BABCOCK, 5.2 KM  
AD7896'(3.25 MI) WEST OF THE GLADES-CHARLOTTE COUNTY LINE, IN THE  
AD7896'RIGHT-OF-WAY OF COUNTY ROAD 74, IN SECTION 4, T 41 S, R 27 E.  
AD7896'OWNERSHIP--CHARLOTTE COUNTY.  
AD7896'TO REACH THE STATION FROM THE INTERSECTION OF STATE ROUTE 31 AND  
AD7896'COUNTY ROAD 74 IN BABCOCK, GO EAST ALONG COUNTY ROAD 74 FOR 7.3 KM  
AD7896'(4.55 MI) TO THE ENTRANCE TO PARADISE RV PARK, CONTINUE EAST ALONG  
AD7896'COUNTY ROAD 74 FOR 7 KM (4.35 MI) TO THE STATION ON RIGHT.  
AD7896'THE STATION IS RECESSED 10 CM BELOW GROUND. LOCATED 1.28 M (4.2 FT)  
AD7896'NORTH OF A FENCE LINE, 14.72 M (48.3 FT) SOUTH OF THE CENTERLINE OF  
AD7896'STATE ROUTE 74, 21.09 M (69.2 FT) WEST OF THE WESTERNMOST BRACE POLE  
AD7896'OF A PAIR AND 1.31 M (4.3 FT) NORTH OF A CARSONITE WITNESS POST.  
AD7896'DESCRIBED BY R.L. MALLOY.  
AD7896  
AD7896 STATION RECOVERY (1992)  
AD7896  
AD7896'RECOVERY NOTE BY DENI ASSOCIATES INCORPORATED 1992  
AD7896'RECOVERED IN GOOD CONDITION.  
AD7896  
AD7896 STATION RECOVERY (1993)  
AD7896  
AD7896'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1993  
AD7896'STATION IS LOCATED ABOUT 14.3 KM (8.90 MI) EAST OF BABCOCK, 5.2 KM

AD7896'(3.25 MI) WEST OF THE GLADES-CHARLOTTE COUNTY LINE, IN THE  
AD7896'RIGHT-OF-WAY OF COUNTY ROAD 74, SECT.4, TNSP 41S, RGE 27E.  
AD7896'OWNERSHIP--CHARLOTTE COUNTY.  
AD7896'TO REACH THE STATION FROM THE INTERSECTION OF STATE ROUTE 31 AND  
AD7896'COUNTY ROAD 74 IN BABCOCK, GO EAST ALONG COUNTY ROAD 74 7.3 KM  
AD7896'(4.55 MI) TO THE ENTRANCE TO PARADISE RV PARK ON LEFT, CONTINUE EAST  
AD7896'ALONG COUNTY ROAD 74 7 KM (4.35 MI) TO THE STATION ON THE RIGHT.  
AD7896'STATION IS 1.28 M (4.20 FT) NORTH OF A FENCE LINE, 14.72 M (48.29 FT)  
AD7896'SOUTH OF THE CENTERLINE OF STATE ROUTE 74, 21.09 M (69.19 FT) WEST OF  
AD7896'THE WESTERNMOST BRACE POLE OF A PAIR AND 1.31 M (4.30 FT) NORTH OF A  
AD7896'WITNESS POST.  
AD7896  
AD7896                      STATION RECOVERY (1999)  
AD7896  
AD7896'RECOVERY NOTE BY CHARLOTTE COUNTY FLORIDA 1999  
AD7896'RECOVERED AS DESCRIBED.

DG4691 \*\*\*\*\*  
 DG4691 CORS - This is a GPS Continuously Operating Reference Station.  
 DG4691 DESIGNATION - FORT MYERS CORS ARP  
 DG4691 CORS\_ID - FMYR  
 DG4691 PID - DG4691  
 DG4691 STATE/COUNTY- FL/LEE  
 DG4691 USGS QUAD - FORT MYERS SE (1987)  
 DG4691  
 DG4691 \*CURRENT SURVEY CONTROL  
 DG4691 \_\_\_\_\_  
 DG4691\* NAD 83(CORS)- 26 35 27.50814(N) 081 51 50.97251(W) ADJUSTED  
 DG4691\* NAVD 88 -  
 DG4691 \_\_\_\_\_  
 DG4691 EPOCH DATE - 2002.00  
 DG4691 X - 807,700.702 (meters) COMP  
 DG4691 Y - -5,649,862.877 (meters) COMP  
 DG4691 Z - 2,837,755.986 (meters) COMP  
 DG4691 ELLIP HEIGHT- -13.27 (meters) (03/??/04) GPS OBS  
 DG4691 GEOID HEIGHT- -24.14 (meters) GEOID03  
 DG4691  
 DG4691 HORZ ORDER - SPECIAL (CORS)  
 DG4691 ELLP ORDER - SPECIAL (CORS)  
 DG4691  
 DG4691. ITRF positions are available for this station.  
 DG4691. The coordinates were established by GPS observations  
 DG4691. and adjusted by the National Geodetic Survey in March 2004..  
 DG4691. The coordinates are valid at the epoch date displayed above.  
 DG4691. The epoch date for horizontal control is a decimal equivalence  
 DG4691. of Year/Month/Day.  
 DG4691  
 DG4691  
 DG4691. The PID for the CORS L1 Phase Center is DG4692.  
 DG4691  
 DG4691. The XYZ, and position/ellipsoidal ht. are equivalent.  
 DG4691  
 DG4691. The ellipsoidal height was determined by GPS observations  
 DG4691. and is referenced to NAD 83.  
 DG4691  
 DG4691. The geoid height was determined by GEOID03.  
 DG4691  
 DG4691;  
 DG4691; North East Units Scale Factor Converg.  
 DG4691; SPC FL W - 250,093.741 213,530.531 MT 0.99994344 +0 03 38.9  
 DG4691; SPC FL W - 820,515.88 700,558.08 sFT 0.99994344 +0 03 38.9  
 DG4691  
 DG4691! - Elev Factor x Scale Factor = Combined Factor  
 DG4691! SPC FL W - 1.00000208 x 0.99994344 = 0.99994552  
 DG4691  
 DG4691 SUPERSEDED SURVEY CONTROL  
 DG4691  
 DG4691. No superseded survey control is available for this station.  
 DG4691  
 DG4691 \_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMK1395241424(NAD 83)  
 DG4691 \_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA  
 DG4691  
 DG4691 STATION DESCRIPTION  
 DG4691

DG4691'DESCRIBED BY NATIONAL GEODETIC SURVEY 2004  
DG4691'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND  
DG4691'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE  
DG4691'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.  
DG4691' FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION\_LOG  
DG4691' HTTP://WWW.NGS.NOAA.GOV UNDER PRODUCTS AND SERVICES.

AF0480 \*\*\*\*\*

AF0480 CBN - This is a Cooperative Base Network Control Station.

AF0480 DESIGNATION - FORT RESET

AF0480 PID - AF0480

AF0480 STATE/COUNTY- FL/HARDEE

AF0480 USGS QUAD - FT GREEN (1987)

AF0480

AF0480 \*CURRENT SURVEY CONTROL

AF0480

AF0480\* NAD 83(1999)- 27 35 41.96740(N) 081 59 22.03280(W) ADJUSTED

AF0480\* NAVD 88 - 37.1 (meters) 122. (feet) GPS OBS

AF0480

AF0480 X - 788,286.133 (meters) COMP

AF0480 Y - -5,601,465.792 (meters) COMP

AF0480 Z - 2,936,808.688 (meters) COMP

AF0480 LAPLACE CORR- -1.31 (seconds) DEFLEC99

AF0480 ELLIP HEIGHT- 12.13 (meters) (05/31/01) GPS OBS

AF0480 GEOID HEIGHT- -25.03 (meters) GEOID03

AF0480

AF0480 HORZ ORDER - B

AF0480 ELLP ORDER - FIFTH CLASS I

AF0480

AF0480.The horizontal coordinates were established by GPS observations

AF0480.and adjusted by the National Geodetic Survey in May 2001.

AF0480

AF0480.The orthometric height was determined by GPS observations and a

AF0480.high-resolution geoid model.

AF0480

AF0480.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AF0480

AF0480.The Laplace correction was computed from DEFLEC99 derived deflections.

AF0480

AF0480.The ellipsoidal height was determined by GPS observations

AF0480.and is referenced to NAD 83.

AF0480

AF0480.The geoid height was determined by GEOID03.

AF0480

AF0480; North East Units Scale Factor Converg.

AF0480;SPC FL W - 361,330.108 201,041.159 MT 0.99994119 +0 00 17.6

AF0480;UTM 17 - 3,052,729.356 402,350.332 MT 0.99971770 -0 27 30.1

AF0480

AF0480! - Elev Factor x Scale Factor = Combined Factor

AF0480!SPC FL W - 0.99999809 x 0.99994119 = 0.99993928

AF0480!UTM 17 - 0.99999809 x 0.99971770 = 0.99971580

AF0480

AF0480: Primary Azimuth Mark Grid Az

AF0480:SPC FL W - FORT AZ MK 091 37 41.6

AF0480:UTM 17 - FORT AZ MK 092 05 29.3

AF0480

AF0480|-----|

AF0480| PID Reference Object Distance Geod. Az |

AF0480| dddmmss.s |

AF0480| AF0479 FORT GREEN TANK APPROX. 5.5 KM 0550929.3 |

AF0480| AF0477 BOWLING GREEN MUN TANK APPROX.17.2 KM 0730151.2 |

AF0480| CW7140 FORT AZ MK 0913759.2 |

AF0480| AF0478 WAUCHULA NEW MUN TANK APPROX.18.5 KM 1053907.8 |

AF0480| CW7141 FORT RM 1 42.285 METERS 12729 |  
 AF0480| CW7142 FORT RM 2 35.232 METERS 22439 |  
 AF0480| CW7143 FORT RM 3 35.348 METERS 22446 |  
 AF0480|-----|

AF0480

AF0480 SUPERSEDED SURVEY CONTROL

AF0480

AF0480 NAD 83(1990)- 27 35 41.96599(N) 081 59 22.03226(W) AD( ) B

AF0480 ELLIP H (09/13/90) 12.16 (m) GP( ) 4 1

AF0480 NAD 83(1986)- 27 35 41.96660(N) 081 59 22.05049(W) AD( ) 2

AF0480 NAD 27 - 27 35 40.83862(N) 081 59 22.74478(W) AD( ) 2

AF0480 NGVD 29 (09/13/90) 37.5 (m) 123. (f) GPS OBS

AF0480

AF0480.Superseded values are not recommended for survey control.

AF0480.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AF0480.See file dsdata.txt to determine how the superseded data were derived.

AF0480

AF0480\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RML0235052729(NAD 83)

AF0480\_MARKER: DH = HORIZONTAL CONTROL DISK

AF0480\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

AF0480\_STAMPING: FORT 1937 1974

AF0480\_MARK LOGO: NGS

AF0480\_MAGNETIC: N = NO MAGNETIC MATERIAL

AF0480\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

AF0480+STABILITY: SURFACE MOTION

AF0480\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AF0480+SATELLITE: SATELLITE OBSERVATIONS - October 01, 2003

AF0480

AF0480 HISTORY - Date Condition Report By

AF0480 HISTORY - 1937 MONUMENTED CGS

AF0480 HISTORY - 1963 MARK NOT FOUND CGS

AF0480 HISTORY - 1974 SEE DESCRIPTION NGS

AF0480 HISTORY - 1974 GOOD NGS

AF0480 HISTORY - 19890302 GOOD NGS

AF0480 HISTORY - 19910501 GOOD KEISCH

AF0480 HISTORY - 20031001 GOOD FL-105

AF0480

AF0480 STATION DESCRIPTION

AF0480

AF0480'DESCRIBED BY COAST AND GEODETIC SURVEY 1937 (RAE)

AF0480'STATION IS ABOUT 13.7 MILES BY ROAD N AND W OF WAUCHULA, 2.8

AF0480'MILES W OF THE FORT GREEN POST OFFICE, ON THE N SIDE OF STATE

AF0480'ROUTE 32, BETWEEN ROADWAY AND FENCE LINE ON RIGHT-OF-WAY

AF0480'PROPERTY. IT IS 42 FEET N OF THE CENTER LINE OF ROUTE 32, 12

AF0480'FEET S OF FENCE LINE, 58 FEET W OF THE CENTER LINE OF A CATTLE

AF0480'GUARD, 89 FEET E OF GATEPOST, ABOUT 0.1 MILE W OF WARNING SIGN

AF0480'STOP FOR SCHOOL BUS. PROJECTS 2 INCHES.

AF0480'

AF0480'SURFACE, UNDERGROUND, REFERENCE AND AZIMUTH MARKS ARE STANDARD

AF0480'BRONZE DISKS SET IN CONCRETE.

AF0480'

AF0480'REFERENCE MARK NO. 1 IS SE OF THE STATION, 42 FEET S OF THE

AF0480'CENTER LINE OF ROUTE 32, 1-1/2 FEET N OF FENCE LINE. MARK IS

AF0480'FLUSH WITH TOP OF GROUND.

AF0480'

AF0480'REFERENCE MARK NO. 2 IS SW OF THE STATION, 42 FEET S OF THE



AF0480'CENTER LINE OF ROUTE 32, 1-1/2 FEET N OF FENCE LINE. MARK  
AF0480'PROJECTS 2 INCHES.

AF0480'

AF0480'AZIMUTH MARK IS E OF THE STATION, 41 FEET S OF THE CENTER LINE  
AF0480'OF ROUTE 32, 1-1/2 FEET N OF FENCE LINE, 30 FEET W OF THE CENTER  
AF0480'LINE OF CATTLE GUARD AND TRAIL SOUTHWARD THROUGH SCRUB  
AF0480'PALMETTOES. MARK PROJECTS 3 INCHES.

AF0480'

AF0480'TO REACH FROM WAUCHULA, GO N ON U.S. ROUTE 17 FOR 3.4 MILES TO  
AF0480'JUNCTION WITH ROUTE 32. HERE TURN W AND GO 10.3 MILES TO THE  
AF0480'STATION ON RIGHT OR 2.8 MILES W OF THE FORT GREEN POST OFFICE TO  
AF0480'STATION.

AF0480'

AF0480'HEIGHT OF LIGHT ABOVE STATION MARK 34.7 METERS.

AF0480

STATION RECOVERY (1963)

AF0480

AF0480'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1963 (VRS)

AF0480'THE STATION WAS NOT RECOVERED AFTER A THOROUGH SEARCH. IT IS  
AF0480'BELIEVED THAT THE STATION WAS DESTROYED WHEN THE HIGHWAY WAS  
AF0480'WIDENED AND REPAVED.

AF0480

STATION RECOVERY (1974)

AF0480

AF0480'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1974 (CLN)

AF0480'RM 1 TO RM 3 OBSTRUCTED BY HIGH BRUSH.

AF0480'

AF0480'THE STATION UNDERGROUND MARK AND REFERENCE MARK 1 WERE RECOVERED  
AF0480'AND FOUND IN GOOD CONDITION. THE SURFACE STATION MARK AND  
AF0480'REFERENCE MARK 2 WERE FOUND DESTROYED. AZIMUTH MARK WAS SEARCHED  
AF0480'FOR AT LENGTH BUT NOT FOUND. APPARENTLY THE AZIMUTH MARK WAS  
AF0480'DESTROYED WHEN THE HIGHWAY WAS RECONSTRUCTED. A NEW SURFACE  
AF0480'STATION MARK WAS SET DIRECTLY OVER THE UNDERGROUND STATION  
AF0480'MARK. REFERENCE MARK 3 WAS ALSO ESTABLISHED AT THIS TIME. THE  
AF0480'DISTANCE TO REFERENCE MARK 1 CHECKED THE ORIGINAL DESCRIPTION.  
AF0480'A NEW AZIMUTH MARK WAS ESTABLISHED AT THIS TIME. DUE TO  
AF0480'CHANGES, A COMPLETE NEW DESCRIPTION FOLLOWS.

AF0480'

AF0480'STATION IS ABOUT 37 MILES SOUTHEAST OF TAMPA, 22 MILES SOUTHWEST  
AF0480'OF BARTOW, 12 MILES WEST-NORTHWEST OF WAUCHULA, 2.8 MILES WEST  
AF0480'OF FORT GREEN SPRINGS AND ON PROPERTY OF MR. D. WATERS WHO LIVES  
AF0480'0.4 MILES EAST OF STATION ON THE NORTH SIDE OF STATE HIGHWAY 62.

AF0480'

AF0480'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 62 AND  
AF0480'SECONDARY ROAD S-663 IN FORT GREEN SPRINGS, GO WEST ON STATE  
AF0480'HIGHWAY 62 FOR 2.75 MILES TO STATION ON RIGHT.

AF0480'

AF0480'STATION MARK, A STANDARD DISK STAMPED FORT 1937 1974, IS SET IN  
AF0480'THE TOP OF A 12-INCH CYLINDRICAL CONCRETE MONUMENT THAT IS SET  
AF0480'3-INCHES BELOW THE GROUND SURFACE. IT IS 261 FEET EAST OF POWER  
AF0480'LINE POLE 16-89A, 128 FEET WEST OF POWER LINE POLE 1689, 41.5  
AF0480'FEET NORTH OF THE CENTER OF STATE HIGHWAY 62, 6.1 FEET NORTH OF  
AF0480'A METAL WITNESS POST, 5.8 FEET NORTH OF A WIRE RIGHT-OF-WAY  
AF0480'FENCE AND 1 FOOT SOUTH OF A METAL WITNESS POST. THE UNDERGROUND  
AF0480'MARK IS A STANDARD DISK STAMPED FORT 1937, IS SET IN THE TOP  
AF0480'OF AN IRREGULAR MASS OF CONCRETE ABOUT 28-INCHES BELOW THE

AF0480'GROUND SURFACE.

AF0480'

AF0480'REFERENCE MARK 1, A STANDARD DISK STAMPED FORT NO 1 1937, IS  
AF0480'SET IN THE TOP OF A 12-INCH SQUARE CONCRETE MONUMENT THAT IS  
AF0480'SET FLUSH WITH THE GROUND SURFACE. IT IS 94 FEET SOUTH-SOUTHWEST  
AF0480'OF POWER LINE POLE NUMBERED 1689, 42 FEET SOUTH OF THE CENTER OF  
AF0480'STATE HIGHWAY 62, 1.3 FEET NORTH OF A WIRE RIGHT-OF-WAY FENCE AND  
AF0480'1.1 FEET NORTHWEST OF A METAL WITNESS POST.

AF0480'

AF0480'REFERENCE MARK 3, A STANDARD DISK STAMPED FORT 1937 NO 3 1974,  
AF0480'IS SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE MONUMENT  
AF0480'THAT IS SET FLUSH WITH THE GROUND SURFACE. IT IS 201 FEET  
AF0480'SOUTHEAST OF POWER LINE POLE 16-89A, 41.3 FEET SOUTH OF THE CENTER  
AF0480'OF HIGHWAY, 1.5 FEET NORTH OF THE WIRE FENCE AND 1 FOOT NORTH OF  
AF0480'A METAL WITNESS POST.

AF0480'

AF0480'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
AF0480'2.8 MILES WEST OF FORT GREEN SPRINGS.

AF0480

AF0480                      STATION RECOVERY (1974)

AF0480

AF0480'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1974  
AF0480'RECOVERED IN GOOD CONDITION.

AF0480

AF0480                      STATION RECOVERY (1989)

AF0480

AF0480'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1989  
AF0480'THE STATION IS LOCATED ABOUT 59.54 KM (37.00 MI) SOUTHEAST OF TAMPA,  
AF0480'35.40 KM (22.00 MI) SOUTHWEST OF BARTOW, 19.31 KM (12.00 MI)  
AF0480'WEST-NORTHWEST OF WAUCHULA, 13.04 KM (8.10 MI) EAST OF DUETTE, 6.12 KM  
AF0480'(3.80 MI) WEST OF FORT GREEN SPRINGS, ON THE NORTH SIDE OF STATE  
AF0480'HIGHWAY 62. OWNERSHIP--UNKNOWN.  
AF0480'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 62 AND  
COUNTY

AF0480'ROAD 663 IN FORT GREEN SPRINGS, GO WEST FOR 4.10 KM (2.55 MI) ON  
AF0480'HIGHWAY 62 TO THE D. WATERS RESIDENCE (BOX 113) ON RIGHT. CONTINUE  
AF0480'WEST FOR 0.56 KM (0.35 MI) ON HIGHWAY 62 TO THE STATION ON RIGHT.  
AF0480'LOCATED 62.03 M (203.5 FT) WEST FROM UTILITY POLE NUMBER 1689, 48.74 M  
AF0480'(159.9 FT) EAST FROM UTILITY POLE NUMBER A1689A, 12.65 M (41.5 FT)  
AF0480'NORTH FROM THE APPROXIMATE CENTER OF HIGHWAY 62, 1.86 M (6.1 FT) NORTH  
AF0480'FROM A WITNESS POST AND 1.77 M (5.8 FT) NORTH FROM A BARBED WIRE  
AF0480'FENCE.

AF0480'DESCRIBED BY R.L. TAYLOR.

AF0480

AF0480                      STATION RECOVERY (1991)

AF0480

AF0480'RECOVERY NOTE BY KEITH AND SCHNARS - LAKELAND 1991  
AF0480'RECOVERED IN GOOD CONDITION.

AF0480

AF0480                      STATION RECOVERY (2003)

AF0480

AF0480'RECOVERY NOTE BY POLK COUNTY FLORIDA 2003 (RWY)  
AF0480'RECOVERED AS DESCRIBED. RECOVERY NOTE BY POLK COUNTY PROPERTY  
AF0480'APPRAISER GIS DEPARTMENT.

1

AG1868 \*\*\*\*\*

AG1868 CBN - This is a Cooperative Base Network Control Station.

AG1868 DESIGNATION - HAVOLINE 2

AG1868 PID - AG1868

AG1868 STATE/COUNTY- FL/SARASOTA

AG1868 USGS QUAD - MYAKKA RIVER (1987)

AG1868

AG1868 \*CURRENT SURVEY CONTROL

AG1868

AG1868\* NAD 83(1999)- 27 02 48.34214(N) 082 15 52.23382(W) ADJUSTED

AG1868\* NAVD 88 - 1.994 (meters) 6.54 (feet) ADJUSTED

AG1868

AG1868 X - 765,135.406 (meters) COMP

AG1868 Y - -5,632,783.596 (meters) COMP

AG1868 Z - 2,882,821.277 (meters) COMP

AG1868 LAPLACE CORR- -0.89 (seconds) DEFLEC99

AG1868 ELLIP HEIGHT- -21.95 (meters) GPS OBS

AG1868 GEOID HEIGHT- -23.84 (meters) GEOID99

AG1868 DYNAMIC HT - 1.991 (meters) 6.53 (feet) COMP

AG1868 MODELED GRAV- 979,129.9 (mgal) NAVD 88

AG1868

AG1868 HORZ ORDER - B

AG1868 VERT ORDER - SECOND CLASS II

AG1868 ELLP ORDER - FIFTH CLASS I

AG1868

AG1868.The horizontal coordinates were established by GPS observations

AG1868.and adjusted by the National Geodetic Survey in May 2001.

AG1868

AG1868.The orthometric height was determined by differential leveling

AG1868.and adjusted by the National Geodetic Survey in June 1991.

AG1868

AG1868.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AG1868

AG1868.The Laplace correction was computed from DEFLEC99 derived deflections.

AG1868

AG1868.The ellipsoidal height was determined by GPS observations

AG1868.and is referenced to NAD 83.

AG1868

AG1868.The geoid height was determined by GEOID99.

AG1868

AG1868.The dynamic height is computed by dividing the NAVD 88

AG1868.geopotential number by the normal gravity value computed on the

AG1868.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AG1868.degrees latitude (g = 980.6199 gals.).

AG1868

AG1868.The modeled gravity was interpolated from observed gravity values.

AG1868

AG1868; North East Units Scale Converg.

AG1868;SPC FL W - 300,612.669 173,758.506 MT 0.99994967 -0 07 13.0

AG1868;UTM 17 - 2,992,243.908 374,587.384 MT 0.99979416 -0 34 30.3

AG1868

AG1868: Primary Azimuth Mark Grid Az

AG1868:SPC FL W - HAVOLINE 2 AZ 275 49 46.9

AG1868:UTM 17 - HAVOLINE 2 AZ 276 17 04.2

AG1868

AG1868|-----|

PID	Reference Object	Distance	Geod. Az
AG1868	AG1871 HAVOLINE RESET	41.707 METERS	00406
AG1868	AG1869 HAVOLINE 2 RM 7	15.262 METERS	09500
AG1868	AG7344 HAVOLINE 2 RM 8	29.998 METERS	27518
AG1868	AG1867 HAVOLINE 2 AZ	495.509 METERS	2754233.9
AG1868	AG1873 HAVOLINE 2 RM 6	8.678 METERS	35825

AG1868|-----|

AG1868

AG1868 SUPERSEDED SURVEY CONTROL

AG1868

AG1868 NAD 83(1990)- 27 02 48.34061(N) 082 15 52.23322(W) AD( ) B

AG1868 ELLIP HT - -21.92 (m) GP( ) 4 1

AG1868 NAD 83(1986)- 27 02 48.34063(N) 082 15 52.24656(W) AD( ) 2

AG1868 NAD 27 - 27 02 47.13459(N) 082 15 52.91223(W) AD( ) 2

AG1868 NGVD 29 - 2.335 (m) 7.66 (f) ADJUSTED 2 2

AG1868

AG1868.Superseded values are not recommended for survey control.

AG1868.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AG1868.See file dsdata.txt to determine how the superseded data were derived.

AG1868

AG1868\_MARKER: DH = HORIZONTAL CONTROL DISK

AG1868\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

AG1868\_STAMPING: HAVOLINE 2 1974

AG1868\_MARK LOGO: NGS

AG1868\_MAGNETIC: N = NO MAGNETIC MATERIAL

AG1868\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

AG1868+STABILITY: SURFACE MOTION

AG1868\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AG1868+SATELLITE: SATELLITE OBSERVATIONS - October 16, 1992

AG1868

HISTORY	- Date	Condition	Report By
AG1868 HISTORY	- 1974	MONUMENTED	NGS
AG1868 HISTORY	- 1974	GOOD	NGS
AG1868 HISTORY	- 1977	GOOD	NGS
AG1868 HISTORY	- 1977	GOOD	NGS
AG1868 HISTORY	- 1983	GOOD	FLDT
AG1868 HISTORY	- 19890327	GOOD	NGS
AG1868 HISTORY	- 19920922	GOOD	DENI
AG1868 HISTORY	- 19921016	GOOD	FL-115
AG1868 HISTORY	- 20020104	GOOD	USPSQD

AG1868

AG1868 STATION DESCRIPTION

AG1868

AG1868'DESCRIBED BY NATIONAL GEODETIC SURVEY 1974 (CLN)

AG1868'STATION IS ABOUT 15-1/2 MILES NORTHWEST OF PUNTA GORDA, 12-1/2

AG1868'MILES EAST-SOUTHEAST OF VENICE, 9 MILES NORTHEAST OF

AG1868'ENGLEWOOD, 1 MILE WEST OF NORTH PORT CHARLOTTE AND ON THE SOUTH

AG1868'SIDE OF U.S. HIGHWAY 41 ON THE RIGHT-OF-WAY LINE.

AG1868'

AG1868'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 41

AG1868'AND SOUTH BISCAYNE DRIVE IN NORTH PORT CHARLOTTE, GO WESTERLY

AG1868'ON U.S. HIGHWAY 41 FOR 1.05 MILES TO POWER LINE POLE 15N9 ON

AG1868'LEFT AND STATION.

AG1868'

AG1868'STATION MARKS ARE STANDARD DISKS STAMPED HAVOLINE 2 1974, THE

AG1868'SURFACE MARK IS A STANDARD DISK SET IN THE TOP OF A 12-INCH  
AG1868'CYLINDRICAL CONCRETE MONUMENT THAT IS SET FLUSH WITH THE  
AG1868'GROUND SURFACE. IT IS 273 FEET EAST-SOUTHEAST OF POWER LINE  
AG1868'POLE 15N10, 127 WEST-SOUTHWEST OF POWER LINE POLE 15N9, 75 FEET  
AG1868'SOUTH OF THE CENTER OF U.S. HIGHWAY 41 (EAST BOUND LANE), 2.4  
AG1868'FEET EAST OF A METAL WITNESS POST, 2.4 FEET WEST OF A METAL  
AG1868'WITNESS POST AND ABOUT 2.5 FEET LOWER IN ELEVATION THAN THE  
AG1868'HIGHWAY. THE UNDERGROUND STATION MARK IS SET IN THE TOP OF AN  
AG1868'IRREGULAR MASS OF CONCRETE 42-INCHES BELOW THE GROUND  
AG1868'SURFACE.

AG1868'

AG1868'REFERENCE MARK 6, A STANDARD DISK STAMPED HAVOLINE 2 NO 6  
AG1868'1974, IS SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE  
AG1868'MONUMENT THAT IS SET FLUSH WITH THE GROUND SURFACE. IT IS 126.5  
AG1868'FEET WEST OF POWER LINE POLE 15N9, 46.5 FEET SOUTH OF  
AG1868'THE CENTER OF U.S. HIGHWAY 41, 2.1 FEET EAST OF A METAL WITNESS  
AG1868'POST, 2 FEET WEST OF A METAL WITNESS POST, IN LINE WITH A ROW OF  
AG1868'POWER LINE POLES AND ABOUT 1 FOOT HIGHER IN ELEVATION THAN THE  
AG1868'STATION.

AG1868'

AG1868'REFERENCE MARK 7, A STANDARD DISK STAMPED HAVOLINE 2 NO 7  
AG1868'1974, IS SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE  
AG1868'MONUMENT THAT IS SET FLUSH WITH THE GROUND SURFACE. IT IS 75.5  
AG1868'FEET SOUTH OF THE CENTER OF U.S. HIGHWAY 41, 80.5 FEET SOUTHWEST  
AG1868'OF POWER LINE POLE 15N9, 2.9 FEET WEST OF A METAL WITNESS  
AG1868'POST AND 6-INCHES HIGHER THAN THE STATION.

AG1868'

AG1868'AZIMUTH MARK, A STANDARD DISK STAMPED HAVOLINE 2 1974, IS  
AG1868'SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE MONUMENT THAT IS  
AG1868'SET FLUSH WITH THE GROUND SURFACE. IT IS 80 FEET WEST OF THE  
AG1868'CENTER OF A PROJECTED LINE OF ORTEGA PLACE STREET, 46 FEET SOUTH OF  
AG1868'THE CENTER OF U.S. HIGHWAY 41 (EAST BOUND LANE), 44 FEET  
AG1868'WEST OF THE CENTER OF GRASS MEDIAN OF BLACKBURN BOULEVARD, 2  
AG1868'FEET EAST OF POWER LINE POLE 102 AND 1.2 FEET SOUTHEAST OF  
AG1868'A METAL WITNESS POST.

AG1868'

AG1868'TO REACH THE AZIMUTH MARK FROM THE STATION, GO WESTERLY ON  
AG1868'U.S. HIGHWAY 41 FOR 0.3 MILE TO MARK ON LEFT AT BLACKBURN  
AG1868'BOULEVARD.

AG1868'

AG1868'HEIGHT OF LIGHT ABOVE STATION MARK 1 METER.

AG1868

AG1868 STATION RECOVERY (1974)

AG1868

AG1868'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1974

AG1868'1 MI W FROM NORTH PORT CHARLOTTE.

AG1868'1.05 MILES WEST ALONG U.S. HIGHWAY 41 FROM ITS JUNCTION WITH  
AG1868'S. BISCAYNE DRIVE IN NORTH PORT CHARLOTTE, 273 FEET EAST-SOUTHEAST  
AG1868'OF POWER LINE POLE 15N10, 127 FEET WEST-SOUTHWEST OF POWER LINE  
AG1868'POLE 15N9, 75 FEET SOUTH OF THE CENTER OF U.S. HIGHWAY 41 (EAST  
AG1868'BOUND LANE), 2.4 FEET WEST OF A METAL WITNESS POST, 2.4 FEET  
AG1868'EAST OF A METAL WITNESS POST, 2.5 FEET LOWER THAN THE SURFACE  
AG1868'OF THE HIGHWAY, ON HIGHWAY RIGHT-OF-WAY AND A DISK SET IN THE  
AG1868'TOP OF A 12-INCH ROUND CONCRETE MONUMENT THAT IS SET FLUSH  
AG1868'WITH THE GROUND SURFACE.

AG1868

AG1868 STATION RECOVERY (1977)

AG1868  
 AG1868'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1977 (CLN)  
 AG1868'THE STATION MARK, REFERENCE MARK 6 AND AZIMUTH MARK WERE  
 AG1868'RECOVERED AND FOUND IN GOOD CONDITION. REFERENCE MARK 7  
 AG1868'WAS DESTROYED WHEN THE ENTRANCE ROAD WAS CONSTRUCTED FOR LA  
 AG1868'CASA ADULT MOBILE COMMUNITY. REFERENCE MARK 8 WAS ESTABLISHED  
 AG1868'AT THIS TIME. DUE TO CHANGES, A COMPLETE NEW DESCRIPTION  
 AG1868'FOLLOWS.

AG1868'  
 AG1868'STATION IS LOCATED ABOUT 1 MILE WEST OF NORTH PORT, ON THE SOUTH  
 AG1868'SIDE OF U.S. HIGHWAY 41 AND ON THE WEST SIDE OF THE ENTRANCE  
 AG1868'ROAD TO LA CASA MOBILE COMMUNITY.

AG1868'  
 AG1868'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 41 AND  
 AG1868'BISCAYNE DRIVE AT THE STOP LIGHT IN NORTH PORT, GO WEST ON  
 AG1868'U.S. HIGHWAY 1 FOR 1.05 MILES TO LA CASA MOBILE COMMUNITY  
 AG1868'AND STATION ON LEFT.

AG1868'  
 AG1868'STATION MARKS ARE STANDARD DISKS STAMPED HAVOLINE 2 1974. THE  
 AG1868'SURFACE MARK IS SET IN A 12-INCH ROUND CONCRETE MONUMENT  
 AG1868'THAT IS 3-INCHES BELOW THE GROUND SURFACE. IT IS 129.5 FEET  
 AG1868'EAST OF POWER LINE POLE 15N9A, 99 FEET WEST OF POWER LINE  
 AG1868'POLE 15N9, 75 FEET SOUTH OF THE CENTER OF THE EAST BOUND LANE  
 AG1868'OF HIGHWAY 41, 61 FEET WEST OF THE CENTER OF THE ENTRANCE  
 AG1868'ROAD TO LA CASA, 25.5 FEET WEST-SOUTHWEST OF THE WEST END OF  
 AG1868'A CONCRETE CULVERT, 2.4 FEET WEST OF A METAL WITNESS POST,  
 AG1868'2.4 FEET EAST OF A METAL WITNESS POST AND ABOUT 3 FEET LOWER  
 AG1868'THAN THE HIGHWAY. THE UNDERGROUND MARK IS SET IN THE TOP OF  
 AG1868'AN IRREGULAR MASS OF CONCRETE.

AG1868'  
 AG1868'REFERENCE MARK 6 IS A STANDARD DISK STAMPED HAVOLINE 2 NO 6  
 AG1868'1974, IS SET IN THE TOP OF A 12-INCH ROUND CONCRETE MONUMENT  
 AG1868'THAT IS 6-INCHES BELOW THE GROUND SURFACE. IT IS 129 FEET  
 AG1868'EAST-NORTHEAST OF POWER LINE POLE 15N9A, 64 FEET WEST OF THE  
 AG1868'CENTER OF THE ENTRANCE ROAD TO LA CASA, 47 FEET SOUTH OF THE  
 AG1868'CENTER OF HIGHWAY 41 EAST BOUND LANE AND 36.5 FEET NORTHWEST  
 AG1868'OF THE WEST END OF A CONCRETE CULVERT.

AG1868'  
 AG1868'REFERENCE MARK 8 IS A STANDARD DISK STAMPED HAVOLINE 2 1974  
 AG1868'NO 8 1977, IS SET IN THE TOP OF A 12-INCH ROUND CONCRETE  
 AG1868'MONUMENT THAT IS SET FLUSH WITH THE GROUND. IT IS 159 FEET  
 AG1868'WEST OF THE CENTER OF THE ENTRANCE ROAD TO LA CASA, 73.5 FEET  
 AG1868'SOUTH OF THE CENTER OF HIGHWAY 41 EAST, 31 FEET EAST OF POWER LINE  
 AG1868'POLE 15N9A, 30.5 FEET EAST OF A METAL WITNESS POST AND ABOUT 2.5  
 AG1868'FEET LOWER THAN THE HIGHWAY.

AG1868'  
 AG1868'AZIMUTH MARK IS LOCATED 0.35 MILE WEST ALONG HIGHWAY 41 FROM  
 AG1868'STATION, AT ENTRANCE TO HARBOR COVE AT U.S. HIGHWAY 41 12000 SOUTH  
 AG1868'AND IS A STANDARD DISK STAMPED HAVOLINE 2 AZ 1974 THAT IS SET  
 AG1868'IN THE TOP OF A 12 INCH ROUND CONCRETE MONUMENT THAT IS 4-INCHES  
 AG1868'BELOW THE GROUND SURFACE. IT IS 45.5 FEET SOUTH OF CENTER OF  
 AG1868'HIGHWAY 41 EAST BOUND LANE. 44 FEET WEST OF THE CENTER OF  
 AG1868'MEDIAN OF BLACKBURN BOULEVARD 29 FEET NORTH-NORTHEAST OF A  
 AG1868'UNDERGROUND TELEVISION CABLE JUNCTION BOX, 10 FEET NORTH OF  
 AG1868'THE WEST END OF A CULVERT AND 1 FOOT EAST OF A METAL WITNESS

AG1868'POST.  
AG1868'  
AG1868'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
AG1868'1 MILE WEST OF NORTH PORT.  
AG1868  
AG1868 STATION RECOVERY (1977)  
AG1868  
AG1868'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1977  
AG1868'1.05 MILES WEST ALONG U.S. HIGHWAY 41 FROM ITS JUNCTION WITH BISCAYNE  
AG1868'DRIVE AT THE STOP LIGHT IN NORTH PORT, 129.5 FEET EAST OF POWER LINE  
AG1868'1.0 MILES WEST ALONG U.S. HIGHWAY 41 FROM ITS JUNCTION WITH BISCAYNE  
AG1868'DRIVE AT THE STOP LIGHT IN NORTH PORT, 129.5 FEET EAST OF POWER LINE  
AG1868'POLE 15 N 9 A, 99.0 FEET WEST OF POWER LINE POLE 15 N 9, 75.0 FEET  
AG1868'SOUTH OF THE CENTER OF THE EAST BOUND LANE OF U.S. HIGHWAY 41, 61.0  
AG1868'FEET WEST OF THE CENTER OF ENTRANCE ROAD TO LA CASA ADULT MOBILE  
AG1868'COMMUNITY, 25.5 FEET WEST-SOUTHWEST OF THE WEST END OF A CONCRETE  
AG1868'CULVERT, AND ON RIGHT-OF-WAY HIGHWAY LINE.  
AG1868  
AG1868 STATION RECOVERY (1983)  
AG1868  
AG1868'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1983  
AG1868'RECOVERED IN GOOD CONDITION.  
AG1868  
AG1868 STATION RECOVERY (1989)  
AG1868  
AG1868'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1989  
AG1868'THE STATION IS LOCATED ABOUT 25.8 KM (16.05 MI) NORTHWEST OF PUNTA  
AG1868'GORDA, 20.2 KM (12.55 MI) EAST-SOUTHEAST OF VENICE, 14.5 KM (9.00 MI)  
AG1868'NORTHEAST OF ENGLEWOOD AND ABOUT 1.6 KM (1.00 MI) WEST OF NORTH PORT,  
AG1868'ON THE SOUTH RIGHT-OF-WAY OF U.S. HIGHWAY 41 EASTBOUND, AND AT THE  
AG1868'ENTRANCE TO THE LACASA MOBILE COMMUNITY. OWNERSHIP--STATE OF FLORIDA.  
AG1868'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 41 AND BISCAYNE  
AG1868'BLVD. AT THE WEST EDGE OF NORTH PORT, GO WESTERLY ALONG U.S. HIGHWAY  
AG1868'41 WESTBOUND FOR 1.6 KM (1.00 MI) TO THE ENTRANCE TO LA CASA MOBILE  
AG1868'COMMUNITY AND THE STATION ON THE LEFT, ABOUT 0.24 KM (0.15 MI) WEST OF  
AG1868'THE HOT MINERAL SPRINGS MOTEL.  
AG1868'THE STATION IS RECESSED 8 CM BELOW GROUND. LOCATED 23.2 M (76.1 FT)  
AG1868'SOUTH OF THE CENTERLINE OF THE EASTBOUND LANES OF HIGHWAY, 18.8 M  
AG1868'(61.7 FT) WEST OF THE CENTER OF PAVED ENTRANCE ROAD TO LA CASA MOBILE  
AG1868'COMMUNITY, 7.7 M (25.3 FT) WEST OF THE WEST END OF A 30-INCH CONCRETE  
AG1868'PIPE CULVERT, 39.6 M (129.9 FT) EAST OF A CONCRETE POWERLINE POLE, 0.8  
AG1868'M (2.6 FT) EAST OF A METAL WITNESS POST, 0.7 M (2.3 FT) WEST OF A  
AG1868'METAL WITNESS POST AND ABOUT 0.61 M (2.0 FT) BELOW THE LEVEL OF THE  
AG1868'HIGHWAY.  
AG1868'DESCRIBED BY G.F. SMITH.  
AG1868  
AG1868 STATION RECOVERY (1992)  
AG1868  
AG1868'RECOVERY NOTE BY DENI ASSOCIATES INCORPORATED 1992  
AG1868'RECOVERED IN GOOD CONDITION.  
AG1868  
AG1868 STATION RECOVERY (1992)  
AG1868  
AG1868'RECOVERY NOTE BY SARASOTA COUNTY FLORIDA 1992  
AG1868'TO REACH THE STATION FROM THE INTERSECTION OF RIVER ROAD AND U.S.  
AG1868'HIGHWAY 41 (TAMIAMI TRAIL) IN SARASOTA COUNTY, GO EASTERLY ON U.S.

AG1868'HIGHWAY 41 (TAMIAMI TRAIL), 2.2 MI (3.54 KM) TO THE STATION ON THE  
 AG1868'RIGHT.  
 AG1868'THE STATION IS A NATIONAL GEODETIC SURVEY (N.G.S.) HORIZONTAL CONTROL  
 AG1868'DISK STAMPED ---HAVOLINE 2 1974--- SET IN A ROUND CONCRETE MONUMENT  
 AG1868'5-INCHES BELOW THE GROUND. IT IS 47.7 FT (14.54 M) SOUTHERLY OF THE  
 AG1868'SOUTHERLY EDGE OF ASPHALT PAVEMENT ROAD BED FOR THE SOUTH BOUND LANES  
 AG1868'OF U.S. HIGHWAY 41 (TAMIAMI TRAIL), 40.9 FT (12.47 M) WESTERLY OF THE  
 AG1868'WESTERLY EDGE OF ASPHALT PAVEMENT ROAD BED FOR THE ENTRANCE TO LA  
 AG1868'CASA MOBILE HOME PARK.  
 AG1868'REFERENCES--  
 AG1868'REFERENCE MARK NUMBER 6 IS A NATIONAL GEODETIC SURVEY (N.G.S.)  
 AG1868'REFERENCE DISK STAMPED ---HAVOLINE 2 NO 6 1974--- SET IN A ROUND  
 AG1868'CONCRETE MONUMENT THAT IS 6-INCHES BELOW THE GROUND. IT IS 28.53 FT  
 AG1868'(8.70 M)NORTHERLY OF N.G.S. HORIZONTAL CONTROL STATION HAVOLINE 2.  
 AG1868'REFERENCE MARK NUMBER 8 IS A NATIONAL GEODETIC SURVEY (N.G.S.)  
 AG1868'REFERENCE DISK STAMPED ---HAVOLINE 2 NO 8 1974 1977--- SET IN A ROUND  
 AG1868'CONCRETE MONUMENT THAT IS FLUSH WITH THE GROUND. IT IS 98.48 FT  
 AG1868'(30.02 M)WESTERLY OF N.G.S. HORIZONTAL CONTROL STATION HAVOLINE 2.  
 AG1868  
 AG1868                               STATION RECOVERY (2002)  
 AG1868  
 AG1868'RECOVERY NOTE BY US POWER SQUADRON 2002 (MDB)  
 AG1868'RECOVERED IN GOOD CONDITION.



AD6362 \*\*\*\*\*

AD6362 DESIGNATION - I75 82 A07

AD6362 PID - AD6362

AD6362 STATE/COUNTY- FL/CHARLOTTE

AD6362 USGS QUAD - GILCHRIST (1987)

AD6362

AD6362 \*CURRENT SURVEY CONTROL

AD6362

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AD6362\* NAD 83(1990)- 26 49 44.77494(N) 081 57 08.42281(W) ADJUSTED

AD6362\* NAVD 88 - 8.272 (meters) 27.14 (feet) ADJUSTED

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AD6362

AD6362 LAPLACE CORR- -1.73 (seconds) DEFLEC99

AD6362 GEOID HEIGHT- -23.98 (meters) GEOID99

AD6362 DYNAMIC HT - 8.259 (meters) 27.10 (feet) COMP

AD6362 MODELED GRAV- 979,098.7 (mgal) NAVD 88

AD6362

AD6362 HORZ ORDER - SECOND

AD6362 VERT ORDER - SECOND CLASS II

AD6362

AD6362.The horizontal coordinates were established by classical geodetic methods

AD6362.and adjusted by the National Geodetic Survey in May 1991.

AD6362

AD6362.The orthometric height was determined by differential leveling

AD6362.and adjusted by the National Geodetic Survey in June 1991.

AD6362

AD6362.The Laplace correction was computed from DEFLEC99 derived deflections.

AD6362

AD6362.The geoid height was determined by GEOID99.

AD6362

AD6362.The dynamic height is computed by dividing the NAVD 88

AD6362.geopotential number by the normal gravity value computed on the

AD6362.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AD6362.degrees latitude (g = 980.6199 gals.).

AD6362

AD6362.The modeled gravity was interpolated from observed gravity values.

AD6362

AD6362; North East Units Scale Converg.

AD6362;SPC FL W - 276,470.422 204,737.372 MT 0.99994145 +0 01 17.4

AD6362;UTM 17 - 2,967,862.158 405,368.427 MT 0.99971055 -0 25 47.5

AD6362

AD6362|-----|

PID	Reference Object	Distance dddmss.s	Geod. Az
AD6361	I75 82 A07 RM 2	9.216 METERS	08121
AD6363	I75 82 A07 RM 1	10.868 METERS	35555

AD6362|-----|

AD6362

AD6362 SUPERSEDED SURVEY CONTROL

AD6362

AD6362 NAD 83(1986)- 26 49 44.77469(N) 081 57 08.43733(W) AD( ) 2

AD6362 NGVD 29 - 8.620 (m) 28.28 (f) ADJUSTED 2 2

AD6362

AD6362.Superseded values are not recommended for survey control.

AD6362.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AD6362.See file dsdata.txt to determine how the superseded data were derived.

AD6362

AD6362\_MARKER: DD = SURVEY DISK  
 AD6362\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 AD6362\_STAMPING: I75 82 A07  
 AD6362\_MARK LOGO: FLDT  
 AD6362\_PROJECTION: RECESSED 8 CENTIMETERS  
 AD6362\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 AD6362\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 AD6362+STABILITY: SURFACE MOTION  
 AD6362  

AD6362 HISTORY	- Date	Condition	Report By
AD6362 HISTORY	- 1982	MONUMENTED	FLDT
AD6362 HISTORY	- 1982	GOOD	FLDT
AD6362 HISTORY	- 20011011	GOOD	USPSQD

 AD6362  
 AD6362 STATION DESCRIPTION  
 AD6362  
 AD6362'DESCRIBED BY FLORIDA DEPARTMENT OF TRANSPORTATION 1982 (CBM)  
 AD6362'STATION IS LOCATED ABOUT 6 MILES NORTHWEST OF INTERSECTION OF  
 AD6362'INTERSTATE ROUTE 75 WITH LEE-CHARLOTTE COUNTY LINE AND ABOUT 9-3/4  
 AD6362'MILES SOUTHEAST OF PUNTA GORDA, ON INTERSTATE ROUTE 75 RIGHT-OF-WAY.  
 AD6362'  
 AD6362'TO REACH STATION FROM INTERSTATE ROUTE 75 AND CHARLOTTE-LEE COUNTY,  
 AD6362'NORTH ON INTERSTATE ROUTE 75 FOR 6.35 MILES TO STATION ON RIGHT OVER  
 AD6362'A TWIN BOX CULVERT. IT IS ALSO 2.55 MILES SOUTHEAST ALONG INTERSTATE  
 AD6362'ROUTE 75 FROM TUCKERS GRADE ROAD.  
 AD6362'  
 AD6362'THE STATION MARK IS A FLORIDA DEPARTMENT OF TRANSPORTATION BRASS  
 DISK,  
 AD6362'STAMPED---I75 82 A07---, SET IN TOP OF A ROUND CONCRETE MONUMENT  
 AD6362'3 INCHES BELOW GROUND. IT IS 23.5 FEET SOUTHWEST OF EDGE OF BOX  
 AD6362'CULVERT HEADWALL, 28.5 FEET NORTHEAST OF CENTER OF NORTHBOUND LANE,  
 AD6362'36.5 FEET SOUTH OF NORTHWEST END OF HEADWALL, 41.7 FEET WEST OF  
 AD6362'SOUTHEAST END OF HEADWALL AND 41.8 FEET WEST OF METAL WITNESS POST.  
 AD6362'  
 AD6362'REFERENCE MARK NUMBER 1 IS A FLORIDA DEPARTMENT OF TRANSPORTATION  
 AD6362'BRASS DISK, STAMPED---I75 82 A07 RM NO 1---, SET IN DRILL HOLE IN TOP  
 AD6362'OF CONCRETE HEADWALL. IT IS 1.5 FEET SOUTHEAST OF NORTHWEST END OF  
 AD6362'HEADWALL, 13.5 FEET NORTHWEST OF EXPANSION JOINT IN HEADWALL AND 52.6  
 AD6362'FEET NORTHEAST OF CENTER OF NORTHBOUND LANE.  
 AD6362'  
 AD6362'REFERENCE MARK NUMBER 2 IS A FLORIDA DEPARTMENT OF TRANSPORTATION  
 AD6362'BRASS DISK, STAMPED---I75 82 A07 RM NO 2---, SET IN DRILL HOLE IN TOP  
 AD6362'OF CONCRETE HEADWALL. IT IS 1.0 FOOT NORTHWEST OF EXPANSION JOINT IN  
 AD6362'HEADWALL, 15.4 FEET NORTHWEST OF A METAL WITNESS POST AND 52.6 FEET  
 AD6362'NORTHEAST OF CENTER OF NORTHBOUND LANE.  
 AD6362  
 AD6362 STATION RECOVERY (1982)  
 AD6362  
 AD6362'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1982  
 AD6362'9.5 MI SE FROM PUNTA GORDA.  
 AD6362'FROM THE SOUTH END OF THE INTERSTATE ROUTE 75 BRIDGES OVER PEACE  
 RIVER  
 AD6362'AT THE NORTHEAST EDGE OF PUNTA GORDA, GO SOUTHEAST ON INTERSTATE  
 ROUTE  
 AD6362'75 FOR ABOUT 7.1 MILES TO THE INTERSECTION OF STATE ROAD 762 (GREEN  
 AD6362'GULF BOULEVARD, CONTINUE SOUTHEAST ON INTERSTATE ROUTE 75 FOR ABOUT

AD6362'2.4 MILES TO A CONCRETE HEADWALL ON NORTHEAST SIDE OF THE NORTHBOUND  
AD6362'LANES. IT IS 41.7 FEET WEST OF THE SOUTHEAST END OF THE HEADWALL,  
AD6362'36.5 FEET SOUTH OF THE NORTHWEST END, 28.5 FEET NORTHEAST OF THE  
AD6362'CENTER OF THE NORTHBOUND LANES AND 23.5 FEET SOUTHWEST OF THE EDGE OF  
AD6362'THE HEADWALL.

AD6362'THE MARK IS 42.0 FT W FROM A WITNESS POST.

AD6362

AD6362 STATION RECOVERY (2001)

AD6362

AD6362'RECOVERY NOTE BY US POWER SQUADRON 2001 (MDB)

AD6362'RECOVERED IN GOOD CONDITION.

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AJ3139 *****
AJ3139 CORS      - This is a GPS Continuously Operating Reference Station.
AJ3139 DESIGNATION - MAC DILL AFB 1 CORS ARP
AJ3139 CORS_ID   - MCD1
AJ3139 PID       - AJ3139
AJ3139 STATE/COUNTY- FL/HILLSBOROUGH
AJ3139 USGS QUAD  - PORT TAMPA (1983)
AJ3139
AJ3139                *CURRENT SURVEY CONTROL
AJ3139 _____
AJ3139* NAD 83(CORS)- 27 50 59.33879(N)  082 31 56.33636(W)  ADJUSTED
AJ3139* NAVD 88      -
AJ3139 _____
AJ3139 EPOCH DATE   - 2002.00
AJ3139 X            - 733,468.848 (meters)          COMP
AJ3139 Y            - -5,595,635.059 (meters)        COMP
AJ3139 Z            - 2,961,793.383 (meters)          COMP
AJ3139 ELLIP HEIGHT- -14.33 (meters)      (03/??/02) GPS OBS
AJ3139 GEOID HEIGHT- -24.77 (meters)      GEOID03
AJ3139
AJ3139 HORZ ORDER   - SPECIAL (CORS)
AJ3139 ELLP ORDER   - SPECIAL (CORS)
AJ3139
AJ3139.ITRF positions are available for this station.
AJ3139.The coordinates were established by GPS observations
AJ3139.and adjusted by the National Geodetic Survey in March 2002..
AJ3139.The coordinates are valid at the epoch date displayed above.
AJ3139.The epoch date for horizontal control is a decimal equivalence
AJ3139.of Year/Month/Day.
AJ3139
AJ3139
AJ3139.The PID for the CORS L1 Phase Center is AJ3140.
AJ3139
AJ3139.The XYZ, and position/ellipsoidal ht. are equivalent.
AJ3139
AJ3139.The ellipsoidal height was determined by GPS observations
AJ3139.and is referenced to NAD 83.
AJ3139
AJ3139.The geoid height was determined by GEOID03.
AJ3139
AJ3139;           North      East      Units Scale Factor Converg.
AJ3139;SPC FL W   - 389,680.653 147,570.681 MT 0.99997509 -0 14 55.2
AJ3139;SPC FL W   - 1,278,477.28 484,154.81 sFT 0.99997509 -0 14 55.2
AJ3139
AJ3139!           - Elev Factor x Scale Factor = Combined Factor
AJ3139!SPC FL W   - 1.00000225 x 0.99997509 = 0.99997734
AJ3139
AJ3139                SUPERSEDED SURVEY CONTROL
AJ3139
AJ3139 NAD 83(CORS)- 27 50 59.33867(N)  082 31 56.33637(W) AD(1997.00) c
AJ3139 ELLIP H (05/??/01) -14.33 (m)          GP(1997.00) c c
AJ3139
AJ3139.Superseded values are not recommended for survey control.
AJ3139.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AJ3139.See file dsdata.txt to determine how the superseded data were derived.
AJ3139

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AJ3139\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLL4912081509(NAD 83)  
AJ3139\_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA  
AJ3139  
AJ3139                   STATION DESCRIPTION  
AJ3139  
AJ3139'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002  
AJ3139'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND  
AJ3139'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE  
AJ3139'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.  
AJ3139' FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION\_LOG  
AJ3139' HTTP://WWW.NGS.NOAA.GOV UNDER PRODUCTS AND SERVICES.

DE9138 \*\*\*\*\*

DE9138 CORS - This is a GPS Continuously Operating Reference Station.

DE9138 DESIGNATION - OKEECHOBEE CORS ARP

DE9138 CORS\_ID - OKCB

DE9138 PID - DE9138

DE9138 STATE/COUNTY- FL/OKEECHOBEE

DE9138 USGS QUAD - TAYLOR CREEK SE (1972)

DE9138

DE9138 \*CURRENT SURVEY CONTROL

---

DE9138\* NAD 83(CORS)- 27 15 57.71572(N) 080 51 19.18214(W) ADJUSTED

DE9138\* NAVD 88 -

---

DE9138 EPOCH DATE - 2002.00

DE9138 X - 901,666.240 (meters) COMP

DE9138 Y - -5,601,322.299 (meters) COMP

DE9138 Z - 2,904,443.076 (meters) COMP

DE9138 ELLIP HEIGHT- -13.75 (meters) (12/??/02) GPS OBS

DE9138 GEOID HEIGHT- -26.59 (meters) GEOID03

DE9138

DE9138 HORZ ORDER - SPECIAL (CORS)

DE9138 ELLP ORDER - SPECIAL (CORS)

DE9138

DE9138. ITRF positions are available for this station.

DE9138. The coordinates were established by GPS observations

DE9138. and adjusted by the National Geodetic Survey in December 2002..

DE9138. The coordinates are valid at the epoch date displayed above.

DE9138. The epoch date for horizontal control is a decimal equivalence

DE9138. of Year/Month/Day.

DE9138

DE9138

DE9138. The PID for the CORS L1 Phase Center is DE9139.

DE9138

DE9138. The XYZ, and position/ellipsoidal ht. are equivalent.

DE9138

DE9138. The ellipsoidal height was determined by GPS observations

DE9138. and is referenced to NAD 83.

DE9138

DE9138. The geoid height was determined by GEOID03.

DE9138

DE9138;	North	East	Units	Scale	Factor	Converg.
DE9138;SPC FL E	- 324,888.459	214,324.588	MT	0.99994371	+0 03 58.6	
DE9138;SPC FL E	- 1,065,904.89	703,163.25	sFT	0.99994371	+0 03 58.6	

DE9138

DE9138! - Elev Factor x Scale Factor = Combined Factor

DE9138!SPC FL E - 1.00000216 x 0.99994371 = 0.99994587

DE9138

DE9138 SUPERSEDED SURVEY CONTROL

DE9138

DE9138. No superseded survey control is available for this station.

DE9138

DE9138\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNL1432015910(NAD 83)

DE9138\_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA

DE9138

DE9138 STATION DESCRIPTION

DE9138

DE9138'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002  
DE9138'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND  
DE9138'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE  
DE9138'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.  
DE9138' FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION\_LOG  
DE9138' HTTP://WWW.NGS.NOAA.GOV UNDER PRODUCTS AND SERVICES.

AG6295 \*\*\*\*\*

AG6295 DESIGNATION - PARISH

AG6295 PID - AG6295

AG6295 STATE/COUNTY- FL/MANATEE

AG6295 USGS QUAD - PARRISH (1987)

AG6295

AG6295 \*CURRENT SURVEY CONTROL

AG6295

AG6295\* NAD 83(1999)- 27 35 26.78573(N) 082 23 19.48556(W) ADJUSTED

AG6295\* NAVD 88 - 9.889 (meters) 32.44 (feet) ADJUSTED

AG6295

AG6295 X - 749,256.374 (meters) COMP

AG6295 Y - -5,607,014.103 (meters) COMP

AG6295 Z - 2,936,382.026 (meters) COMP

AG6295 LAPLACE CORR- -1.47 (seconds) DEFLEC99

AG6295 ELLIP HEIGHT- -14.86 (meters) GPS OBS

AG6295 GEOID HEIGHT- -24.67 (meters) GEOID99

AG6295 DYNAMIC HT - 9.874 (meters) 32.39 (feet) COMP

AG6295 MODELED GRAV- 979,142.4 (mgal) NAVD 88

AG6295

AG6295 HORZ ORDER - B

AG6295 VERT ORDER - SECOND CLASS 0

AG6295 ELLP ORDER - FIFTH CLASS I

AG6295

AG6295.The horizontal coordinates were established by GPS observations

AG6295.and adjusted by the National Geodetic Survey in May 2001.

AG6295

AG6295.The orthometric height was determined by differential leveling

AG6295.and adjusted by the National Geodetic Survey in June 1991.

AG6295

AG6295.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AG6295

AG6295.The Laplace correction was computed from DEFLEC99 derived deflections.

AG6295

AG6295.The ellipsoidal height was determined by GPS observations

AG6295.and is referenced to NAD 83.

AG6295

AG6295.The geoid height was determined by GEOID99.

AG6295

AG6295.The dynamic height is computed by dividing the NAVD 88

AG6295.geopotential number by the normal gravity value computed on the

AG6295.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AG6295.degrees latitude (g = 980.6199 gals.).

AG6295

AG6295.The modeled gravity was interpolated from observed gravity values.

AG6295

AG6295; North East Units Scale Converg.

AG6295;SPC FL W - 360,923.081 161,620.828 MT 0.99995935 -0 10 48.2

AG6295;UTM 17 - 3,052,641.079 362,934.916 MT 0.99983190 -0 38 35.9

AG6295

AG6295: Primary Azimuth Mark Grid Az

AG6295:SPC FL W - GILLETTE 272 00 24.4

AG6295:UTM 17 - GILLETTE 272 28 12.1

AG6295

AG6295|-----|

AG6295| PID Reference Object Distance Geod. Az |



AG6295| dddmmss.s |  
AG6295| AG6297 PARISH RM 1 49.384 METERS 04457 |  
AG6295| PARISH AZ MK 0672119.1 |  
AG6295| PARISH RM 2 40.380 METERS 11817 |  
AG6295| AG1570 MANATEE NOCATEE CRATE CO TANK APPROX.18.9 KM 2350245.2 |  
AG6295| AG1572 MANATEE MUN TANK APPROX.19.6 KM 2360541.1 |  
AG6295| AG1575 BRADENTON MUN PUMPING STA TANK APPROX.20.4 KM 2381412.3 |  
AG6295| AG1267 PARISH 1934 TP 1 1944 249.898 METERS 23903 |  
AG6295| AG1574 BRADENTON FLORIDA PWR CORP STK APPROX.20.5 KM 2391501.5 |  
AG6295| AG2435 ELLENTON MUNICIPAL TANK APPROX.15.8 KM 2403314.4 |  
AG6295| AG8529 GILLETTE APPROX.13.7 KM 2714936.2 |  
AG6295| AG1282 SUN CITY POWER CO TANK APPROX.13.3 KM 3182712.2 |  
AG6295| AG6296 PARISH RM 3 20.679 METERS 32302 |  
AG6295|-----|

AG6295  
AG6295 SUPERSEDED SURVEY CONTROL

AG6295  
AG6295 ELLIP HT - -14.83 (m) GP( ) 3 2  
AG6295 NAD 83(1990)- 27 35 26.78425(N) 082 23 19.48476(W) AD( ) B  
AG6295 ELLIP HT - -14.72 (m) GP( ) 4 1  
AG6295 NAD 83(1986)- 27 35 26.78868(N) 082 23 19.49797(W) AD( ) 1  
AG6295 NAD 27 - 27 35 25.65949(N) 082 23 20.16047(W) AD( ) 1  
AG6295 NGVD 29 - 10.176 (m) 33.39 (f) ADJ UNCH 2 0

AG6295  
AG6295.Superseded values are not recommended for survey control.  
AG6295.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
AG6295.See file dsdata.txt to determine how the superseded data were derived.  
AG6295

AG6295\_MARKER: DS = TRIANGULATION STATION DISK  
AG6295\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
AG6295\_STAMPING: PARISH 1934  
AG6295\_MARK LOGO: CGS  
AG6295\_MAGNETIC: N = NO MAGNETIC MATERIAL  
AG6295\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
AG6295+STABILITY: SURFACE MOTION  
AG6295\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
AG6295+SATELLITE: SATELLITE OBSERVATIONS - February 28, 2000

AG6295  
AG6295 HISTORY - Date Condition Report By  
AG6295 HISTORY - 1934 MONUMENTED CGS  
AG6295 HISTORY - 1943 GOOD CGS  
AG6295 HISTORY - 1954 GOOD CGS  
AG6295 HISTORY - 1958 GOOD CGS  
AG6295 HISTORY - 1960 GOOD CGS  
AG6295 HISTORY - 1972 GOOD NGS  
AG6295 HISTORY - 1972 GOOD NGS  
AG6295 HISTORY - 1981 GOOD FL-057  
AG6295 HISTORY - 19870424 GOOD  
AG6295 HISTORY - 19890302 GOOD NGS  
AG6295 HISTORY - 19910806 GOOD GEOBAS  
AG6295 HISTORY - 19951228 GOOD NGS  
AG6295 HISTORY - 19990405 GOOD USGS  
AG6295 HISTORY - 20000228 GOOD FLDT

AG6295  
AG6295 STATION DESCRIPTION  
AG6295

AG6295'DESCRIBED BY COAST AND GEODETIC SURVEY 1934 (GLA)  
AG6295'THIS STATION IS ABOUT 14.5 MILES NE FROM PALMETTO, 2.3 MILES  
AG6295'EASTWARD FROM PARISH RAILROAD STATION, 60 FEET N OF THE CENTER  
AG6295'LINE OF STATE HIGHWAY 32, 36 FEET NE OF A 20-INCH OAK TREE  
AG6295'(TRIANGULAR BLAZE), 33 PACES W OF THE CENTER LINE OF SAND ROAD  
AG6295'AND PROJECTS 3 INCHES.  
AG6295'  
AG6295'SURFACE, UNDERGROUD, REFERENCE, AND AZIMUTH MARKS ARE STANDARD  
AG6295'BRONZE DISKS SET IN CONCRETE.  
AG6295'  
AG6295'REFERENCE MARK NO. 1 IS NE OF THE STATION, 3.5 FEET W OF THE  
AG6295'FENCE LINE, 7 FEET E OF THE CENTER LINE OF THE SAND ROAD, 120  
AG6295'FEET N OF THE CENTER LINE OF STATE HIGHWAY 32, AND PROJECTS 12  
AG6295'INCHES.  
AG6295'  
AG6295'REFERENCE MARK NO. 2 IS SE OF THE STATION, 1 FOOT W OF THE  
AG6295'FENCE LINE, 53 FEET S OF THE CENTER LINE OF STATE HIGHWAY 32 AND  
AG6295'PROJECTS 10 INCHES.  
AG6295'  
AG6295'AZIMUTH MARK IS ENE OF THE STATION, 41 FEET S OF THE CENTER  
AG6295'LINE OF THE HIGHWAY, 2.5 FEET N OF FENCE LINE AND PROJECTS 12  
AG6295'INCHES.  
AG6295'  
AG6295'TO REACH GO E ON STATE HIGHWAY 32 FOR 2.3 MILES FROM THE PARISH  
AG6295'RAILROAD STATION TO THE STATION ON THE N SIDE OF THE ROAD.  
AG6295'  
AG6295'177.6 FEET BETWEEN THE REFERENCE MARKS.  
AG6295'  
AG6295' STATION RECOVERY (1943)  
AG6295'  
AG6295'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1943 (RLS)  
AG6295'RECOVERED AS DESCRIBED, EXCEPT FOR THE FOLLOWING DISCREPANCIES--  
AG6295'  
AG6295'1. THE STATION IS FLUSH WITH THE GROUND. IT DOES NOT PROJECT  
AG6295'3 INCHES.  
AG6295'  
AG6295'2. REFERENCE MARK 1 IS 9 FEET E OF THE CENTER LINE OF DIRT  
AG6295'ROAD, NOT 7 FEET.  
AG6295'  
AG6295'3. REFERENCE MARK 1 IS 109 FEET N OF CENTER LINE OF STATE  
AG6295'HIGHWAY 32, NOT 120 FEET N OF IT.  
AG6295'  
AG6295' STATION RECOVERY (1954)  
AG6295'  
AG6295'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1954 (IRR)  
AG6295'STATION AND REFERENCE MARKS 1 AND 2 RECOVERED IN GOOD  
AG6295'CONDITION. THE AZIMUTH MARK WAS FOUND LYING ON THE SHOULDER OF  
AG6295'THE ROAD, DESTROYED.  
AG6295'  
AG6295'THE DESCRIPTION IS ADEQUATE WITH THE FOLLOWING CORRECTIONS--  
AG6295'  
AG6295'STATE HIGHWAY 32 HAS BEEN RENUMBERED 62.  
AG6295'  
AG6295'THE MARK IS FLUSH WITH THE GROUND AND COVERED WITH SAND AND  
AG6295'TRASH. A 4- BY 4-IN. CONCRETE WITNESS POST WAS SET 11.3 FT.  
AG6295'TO THE SE AND PROJECTS 18 IN.

AG6295

AG6295 STATION RECOVERY (1958)

AG6295

AG6295'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1958 (ALW)

AG6295'THIS STATION WAS RECOVERED IN JUNE 1958. THE STATION AND  
AG6295'REFERENCE MARK 1 WERE FOUND TO BE IN GOOD CONDITION. REFERENCE  
AG6295'MARK 2 WAS SEARCHED FOR BUT NOT RECOVERED. IT MAY HAVE BEEN  
AG6295'DESTROYED BY HIGHWAY CONSTRUCTION. THE AZIMUTH MARK WAS FOUND  
AG6295'DESTROYED. THE POST WAS FOUND BROKEN OFF. THE DISK WAS  
AG6295'RECOVERED. REFERENCE MARK 3 WAS SET.

AG6295'

AG6295'THE STATION IS LOCATED 2.3 MI. E OF PARISH, 0.25 MI. W OF A  
AG6295'CURVE IN THE HIGHWAY, 160 YD. W OF A SMALL FARM POND, 290 YD. W  
AG6295'OF A JUNCTION WITH AN OILED ROAD LEADING N, 58 FT. N OF THE  
AG6295'CENTERLINE OF STATE HIGHWAY 62, 10.3 FT. N OF A FENCE, 129 FT. W  
AG6295'OF A T-FENCE CORNER, 118 FT. W OF THE W END OF A WIRE GATE, 129  
AG6295'FT. W OF A FENCE LEADING N, 34 FT. NE OF AN 18-IN. DEAD OAK TREE  
AG6295'AND 1.8 FT. E OF A CONCRETE WITNESS POST. A TRIANGULATION  
AG6295'STATION DISK SET IN THE TOP OF A ROUND CONCRETE POST WHICH IS  
AG6295'FLUSH WITH THE GROUND, STAMPED PARISH 1934.

AG6295'

AG6295'REFERENCE MARK 1 IS 161.97 FT. OR 49.369 M. NE OF THE STATION,  
AG6295'3 FT. E OF A N AND S FENCE, 64 FT. N OF A T-FENCE CORNER, 111 FT.  
AG6295'N OF THE CENTERLINE OF THE HIGHWAY AND 69 FT. N OF THE W END OF  
AG6295'A WIRE GATE. A REFERENCE MARK DISK SET IN THE TOP OF A ROUND  
AG6295'CONCRETE POST WHICH PROJECTS 1.0 FT. ABOVE THE GROUND, STAMPED  
AG6295'PARISH NO 1 1934.

AG6295'

AG6295'REFERENCE MARK 3 IS 67.820 FT. OR 20.670 M. N OF THE STATION,  
AG6295'79 FT. N-NE OF AN 18-IN. DEAD OAK TREE, 124 FT. N OF THE CENTERLINE  
AG6295'OF THE HIGHWAY, 77 FT. N OF A FENCE, 157 FT. W OF A FENCE  
AG6295'AND 159 FT. W-NW OF A FENCE. A REFERENCE MARK DISK SET IN THE  
AG6295'TOP OF A SQUARE CONCRETE POST WHICH PROJECTS 0.1 FT. ABOVE THE  
AG6295'GROUND, STAMPED PARISH NO 3 1934.

AG6295'

AG6295'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 62 AND  
AG6295'U.S. HIGHWAY 301 AT PARISH, GO 2.3 MI. E ALONG STATE HIGHWAY 62  
AG6295'TO A T-FENCE CORNER AND THE STATION ON THE LEFT.

AG6295

AG6295 STATION RECOVERY (1960)

AG6295

AG6295'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1960 (WRK)

AG6295'THE STATION, R.M. 1 AND R.M. 3 WERE RECOVERED AS DESCRIBED IN JUNE  
AG6295'1958 AND WERE FOUND IN GOOD CONDITION. STEEL WITNESS POSTS WERE  
AG6295'SET BY ALL MARKS.

AG6295

AG6295 STATION RECOVERY (1972)

AG6295

AG6295'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1972 (LFS)

AG6295'STATION MARK, REFERENCE MARK 1 AND 3 WERE RECOVERED AND FOUND IN  
AG6295'GOOD CONDITION. THE AZIMUTH MARK WAS SEARCHED FOR BUT NOT FOUND  
AG6295'AND APPARENTLY WAS DESTROYED WHEN STATE HIGHWAY 60 WAS WIDENED.  
AG6295'DISTANCE TO REFERENCE MARK 1 CHECKED THE ORIGINAL DESCRIPTION.  
AG6295'DUE TO LACK OF DATA, A COMPLETE NEW DESCRIPTION FOLLOWS.

AG6295'

AG6295'STATION IS ABOUT 23 MILES SOUTHEAST OF SAINT PETERSBURG, 25 MILES

AG6295'SOUTH-SOUTHEAST OF TAMPA, 20 MILES NORTHEAST OF SARASOTA, 2-1/4  
AG6295'MILES EAST OF PARRISH AND ON PROPERTY OWNED BY THE MAYOR OF  
AG6295'PARRISH.

AG6295'

AG6295'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 301 AND  
AG6295'STATE HIGHWAY 62 IN PARRISH, GO EAST ON STATE HIGHWAY 62 FOR 2.35  
AG6295'MILES TO A GATE ON LEFT AND STATION.

AG6295'

AG6295'STATION MARK, A STANDARD DISK STAMPED PARISH 1934, IS SET IN  
AG6295'THE TOP OF A 12-INCH CYLINDRICAL CONCRETE MONUMENT THAT IS  
AG6295'SET FLUSH WITH THE GROUND SURFACE. IT IS 148 FEET WEST-NORTHWEST  
AG6295'OF A 12-INCH PINE TREE, 131 FEET WEST-NORTHWEST OF THE FENCE  
AG6295'CORNER ON THE EAST SIDE OF THE GATE, 58 FEET NORTH OF THE CENTER  
AG6295'OF STATE HIGHWAY 62, 11 FEET NORTH OF A 4-INCH SQUARE CONCRETE  
AG6295'RIGHT-OF-WAY POST, 10 FEET NORTH OF A BARBED WIRE FENCE, 1.8  
AG6295'FEET EAST OF A 4-INCH SQUARE CONCRETE RIGHT-OF-WAY MARKER  
AG6295'POST, 1.5 FEET WEST OF A METAL WITNESS POST AND 1 FOOT NORTH  
AG6295'OF A METAL WITNESS POST.

AG6295'

AG6295'REFERENCE MARK 1, A STANDARD DISK STAMPED PARISH NO 1 1934, IS  
AG6295'SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE MONUMENT THAT  
AG6295'PROJECTS 9-INCHES ABOVE THE GROUND SURFACE. IT IS 108 FEET NORTH  
AG6295'OF THE CENTER OF STATE HIGHWAY 62, 64 FEET NORTHEAST OF THE FENCE  
AG6295'CORNER, 63 FEET NORTH-NORTHWEST OF THE 12-INCH PINE TREE, 2 FEET  
AG6295'SOUTHEAST OF A FENCE, 1.3 FEET NORTHEAST OF A METAL WITNESS POST  
AG6295'AND ABOUT THE SAME ELEVATION AS THE STATION MARK.

AG6295'

AG6295'REFERENCE MARK 3, A STANDARD DISK, STAMPED PARISH NO 3 1934, IS  
AG6295'SET IN THE TOP OF AN 8-INCH SQUARE PRECAST CONCRETE MONUMENT THAT  
AG6295'IS SET FLUSH WITH THE GROUND SURFACE. IT IS 161 FEET NORTHWEST  
AG6295'OF THE FENCE CORNER, 125 FEET NORTH OF THE CENTER OF STATE  
AG6295'HIGHWAY 62, 77 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 1 FOOT EAST  
AG6295'OF A METAL WITNESS POST AND ABOUT THE SAME ELEVATION AS THE  
AG6295'STATION MARK.

AG6295'

AG6295'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN  
AG6295'2.35 MILES EAST OF PARRISH.

AG6295

AG6295                      STATION RECOVERY (1972)

AG6295

AG6295'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1972

AG6295'2.4 MI E FROM PARRISH.

AG6295'2.35 MILES EAST ALONG STATE HIGHWAY 62 FROM ITS JUNCTION WITH  
AG6295'U.S. HIGHWAY 301 IN PARRISH, 148 FEET WEST-NORTHWEST OF A  
AG6295'12-INCH PINE TREE, 131 FEET WEST-NORTHWEST OF A FENCE CORNER,  
AG6295'58 FEET NORTH OF THE CENTER OF STATE HIGHWAY 62, 11 FEET NORTH  
AG6295'OF A 4-INCH SQUARE CONCRETE RIGHT-OF-WAY POST, 10 FEET NORTH OF A  
AG6295'BARBED-WIRE FENCE, 1.8 FEET EAST OF A 4-INCH SQUARE CONCRETE  
AG6295'RIGHT-OF-WAY POST, 1.5 FEET WEST OF A METAL WITNESS POST AND  
AG6295'1 FOOT NORTH OF A METAL WITNESS POST. A STANDARD DISK SET  
AG6295'IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE MONUMENT THAT IS  
AG6295'SET FLUSH WITH THE GROUND SURFACE.

AG6295

AG6295                      STATION RECOVERY (1981)

AG6295

AG6295'RECOVERY NOTE BY HILLSBOROUGH COUNTY FLORIDA 1981 (SW)

AG6295'PARISH 1934 RECOVERED GOOD.  
 AG6295'  
 AG6295'STA. PARISH VERTICALLY OBSTRUCTED BY POWER LINE.  
 AG6295'  
 AG6295'RM NO. 3 CLEAR.  
 AG6295'  
 AG6295'RM NO. 1 NEEDS WITNESS REPLACED.  
 AG6295'  
 AG6295'DISTANCE AND DIRECTION FROM NEAREST TOWN--2.3 MILES EAST OF PARISH.  
 AG6295  
 AG6295 STATION RECOVERY (1987)  
 AG6295  
 AG6295'RECOVERED 1987  
 AG6295'RECOVERED IN GOOD CONDITION.  
 AG6295  
 AG6295 STATION RECOVERY (1989)  
 AG6295  
 AG6295'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1989  
 AG6295'THE STATION IS LOCATED ABOUT 37.0 KM (23.00 MI) SOUTHEAST OF ST.  
 AG6295'PETERSBURG, 3.7 KM (2.30 MI) EAST OF PARRISH, IN SECTION 22, T 33 S, R  
 AG6295'19 E. OWNERSHIP--UNKNOWN.  
 AG6295'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 301 AND STATE  
 AG6295'HIGHWAY 62 IN PARRISH, GO EAST FOR 3.94 KM (2.45 MI) ON HIGHWAY 62 TO  
 AG6295'THE STATION ON LEFT.  
 AG6295'LOCATED 0.24 KM (0.15 MI) WEST FROM THE JUNCTION OF STATE HIGHWAY 62  
 AG6295'AND KEEN ROAD, 17.68 M (58.0 FT) NORTH FROM THE APPROXIMATE CENTER OF  
 AG6295'HIGHWAY 62, 2.96 M (9.7 FT) NORTH FROM A BARBED WIRE FENCE, 2.90 M  
 AG6295'(9.5 FT) WEST FROM A UTILITY POLE, 0.55 M (1.8 FT) EAST FROM A  
 AG6295'RIGHT-OF-WAY MARKER AND 0.30 M (1.0 FT) NORTH FROM A METAL WITNESS  
 AG6295'POST.  
 AG6295'DESCRIBED BY R.L. TAYLOR.  
 AG6295  
 AG6295 STATION RECOVERY (1991)  
 AG6295  
 AG6295'RECOVERY NOTE BY GEOBASE CONTROL INCORPORATED 1991  
 AG6295'RECOVERED IN GOOD CONDITION.  
 AG6295  
 AG6295 STATION RECOVERY (1995)  
 AG6295  
 AG6295'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (CFS)  
 AG6295'THE STATION IS LOCATED ABOUT 23.00 MI (37.01 KM) SOUTHEAST OF ST.  
 AG6295'PETERSBURG, 2.35 MI (3.78 KM) EAST OF PARRISH, IN SECTION 22, T 33 S,  
 AG6295'R 19 E. OWNERSHIP -- UNKNOWN. TO REACH THE STATION FROM THE JUNCTION  
 AG6295'OF U.S. HIGHWAY 301 AND STATE HIGHWAY 62 IN PARRISH, GO EAST ON STATE  
 AG6295'HIGHWAY 62 FOR 2.35 MI (3.78 KM) TO THE STATION ON THE LEFT. LOCATED  
 AG6295'0.15 MI (0.24 KM) WEST OF STATE HIGHWAY 62 AND KEEN ROAD JUNCTION,  
 AG6295'58.0 FT (17.7 M) NORTH FROM THE APPROXIMATE CENTER OF STATE HIGHWAY  
 AG6295'62, 9.7 FT (3.0 M) NORTH OF A BARBED WIRE FENCE, 9.5 FT (2.9 M) WEST  
 AG6295'OF A UTILITY POLE, 1.8 FT (0.5 M) EAST OF A 4-INCH CONCRETE  
 AG6295'RIGHT-OF-WAY MARKER, AND 1.0 FT (0.3 M) NORTH OF A METAL WITNESS POST.  
 AG6295'RECOVERED IN GOOD CONDITION.  
 AG6295  
 AG6295 STATION RECOVERY (1999)  
 AG6295  
 AG6295'RECOVERY NOTE BY US GEOLOGICAL SURVEY 1999  
 AG6295'RECOVERED AS DESCRIBED.

AG6295

AG6295 STATION RECOVERY (2000)

AG6295

AG6295'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 2000 (CDM)

AG6295'RECOVERED AS DESCRIBED.

AF5095 \*\*\*\*\*

AF5095 DESIGNATION - W 260

AF5095 PID - AF5095

AF5095 STATE/COUNTY- FL/DE SOTO

AF5095 USGS QUAD - FT OGDEN (1987)

AF5095

AF5095 \*CURRENT SURVEY CONTROL

AF5095

AF5095\* NAD 83(1999)- 27 03 17.77999(N) 081 57 52.51078(W) ADJUSTED

AF5095\* NAVD 88 - 7.812 (meters) 25.63 (feet) ADJUSTED

AF5095

AF5095 X - 794,553.498 (meters) COMP

AF5095 Y - -5,628,298.081 (meters) COMP

AF5095 Z - 2,883,630.731 (meters) COMP

AF5095 LAPLACE CORR- -1.38 (seconds) DEFLEC99

AF5095 ELLIP HEIGHT- -16.43 (meters) (05/31/01) GPS OBS

AF5095 GEOID HEIGHT- -24.26 (meters) GEOID03

AF5095 DYNAMIC HT - 7.801 (meters) 25.59 (feet) COMP

AF5095 MODELED GRAV- 979,115.3 (mgal) NAVD 88

AF5095

AF5095 HORZ ORDER - B

AF5095 VERT ORDER - FIRST CLASS I

AF5095 ELLP ORDER - FIFTH CLASS I

AF5095

AF5095.The horizontal coordinates were established by GPS observations

AF5095.and adjusted by the National Geodetic Survey in May 2001.

AF5095

AF5095.The orthometric height was determined by differential leveling

AF5095.and adjusted by the National Geodetic Survey in June 1991.

AF5095

AF5095.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AF5095

AF5095.The Laplace correction was computed from DEFLEC99 derived deflections.

AF5095

AF5095.The ellipsoidal height was determined by GPS observations

AF5095.and is referenced to NAD 83.

AF5095

AF5095.The geoid height was determined by GEOID03.

AF5095

AF5095.The dynamic height is computed by dividing the NAVD 88

AF5095.geopotential number by the normal gravity value computed on the

AF5095.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AF5095.degrees latitude (g = 980.6199 gals.).

AF5095

AF5095.The modeled gravity was interpolated from observed gravity values.

AF5095

AF5095; North East Units Scale Factor Converg.

AF5095;SPC FL W - 301,491.633 203,513.064 MT 0.99994133 +0 00 58.0

AF5095;UTM 17 - 2,992,886.521 404,342.269 MT 0.99971296 -0 26 19.6

AF5095

AF5095! - Elev Factor x Scale Factor = Combined Factor

AF5095!SPC FL W - 1.00000258 x 0.99994133 = 0.99994391

AF5095!UTM 17 - 1.00000258 x 0.99971296 = 0.99971554

AF5095

AF5095 SUPERSEDED SURVEY CONTROL

AF5095

AF5095 NAD 83(1990)- 27 03 17.77842(N) 081 57 52.51025(W) AD( ) B

AF5095 ELLIP H (09/13/90) -16.41 (m) GP( ) 4 1

AF5095 NAVD 88 (11/12/93) 7.81 (m) 25.6 (f) LEVELING 3

AF5095 NGVD 29 (09/01/92) 8.159 (m) 26.77 (f) ADJUSTED 1 1

AF5095

AF5095.Superseded values are not recommended for survey control.

AF5095.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AF5095.See file dsdata.txt to determine how the superseded data were derived.

AF5095

AF5095\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMK0434292887(NAD 83)

AF5095\_MARKER: DB = BENCH MARK DISK

AF5095\_SETTING: 46 = COPPER-CLAD STEEL ROD W/O SLEEVE (10 FT.+)

AF5095\_STAMPING: W 260 1966

AF5095\_MARK LOGO: CGS

AF5095\_PROJECTION: FLUSH

AF5095\_MAGNETIC: O = OTHER; SEE DESCRIPTION

AF5095\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

AF5095\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AF5095+SATELLITE: SATELLITE OBSERVATIONS - June 14, 2002

AF5095\_ROD/PIPE-DEPTH: 18.8 meters

AF5095

AF5095 HISTORY	- Date	Condition	Report By
AF5095 HISTORY	- 1966	MONUMENTED	CGS
AF5095 HISTORY	- 1979	GOOD	NGS
AF5095 HISTORY	- 1989	GOOD	NGS
AF5095 HISTORY	- 19920910	GOOD	DENI
AF5095 HISTORY	- 19921029	GOOD	FL-115
AF5095 HISTORY	- 19930303	GOOD	NGS
AF5095 HISTORY	- 19951227	GOOD	NGS
AF5095 HISTORY	- 19961219	GOOD	USPSQD
AF5095 HISTORY	- 20010710	POOR	USPSQD
AF5095 HISTORY	- 20020614	GOOD	JCLS

AF5095

AF5095 STATION DESCRIPTION

AF5095

AF5095'DESCRIBED BY COAST AND GEODETIC SURVEY 1966

AF5095'2.5 MI S FROM FORT OGDEN.

AF5095'ABOUT 2.5 MILES SOUTH ALONG THE ATLANTIC COAST LINE RAILROAD

AF5095'FROM THE STATION AT FORT OGDEN, 0.4 MILE SOUTH OF MILEPOST X 926,

AF5095'AT THE CROSSING OF A BLACK TOP ROAD, IN SECTION 25, R 23 E,

AF5095'T 39 S, 74.0 FEET SOUTHEAST OF THE CENTER OF THE CROSSING, 59.5

AF5095'FEET EAST OF THE EAST RAIL, 43.0 FEET SOUTH OF THE CENTER LINE

AF5095'OF THE ROAD, 1 FOOT WEST OF THE RIGHT-OF-WAY FENCE, 1.5 FEET NORTH

AF5095'OF A METAL WITNESS POST, ABOUT LEVEL WITH THE TRACK AND IS A

AF5095'DISK ON TOP OF A COPPER COATED STEEL ROD FLUSH WITH THE GROUND

AF5095'AND PROTECTED BY A 6-INCH IRON PIPE FLUSH WITH THE GROUND. THE

AF5095'ROD WAS DRIVEN TO REFUSAL AT A DEPTH OF 61.5 FEET.

AF5095

AF5095 STATION RECOVERY (1979)

AF5095

AF5095'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1979

AF5095'RECOVERED IN GOOD CONDITION.

AF5095

AF5095 STATION RECOVERY (1989)

AF5095

AF5095'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1989



AF5095'DISK WAS FOUND SLIGHTLY CHEWED ON BY LAWN MOWER BUT IS INTACT AND AF5095'STABLE ON ROD, ABLE TO OCCUPY FOR GPS OBSERVATIONS.

AF5095'THE STATION IS LOCATED ABOUT 3.6 KM (2.25 MI) SOUTH OF THE SOUTH EDGE AF5095'OF FORT OGDEN, IN A MOWED LAWN AREA AND ON THE EAST RIGHT-OF-WAY OF AF5095'THE ATLANTIC COAST LINE RAILROAD, AND AT THE SOUTH SIDE OF LIVERPOOL AF5095'ROAD. OWNERSHIP--ATLANTIC COAST LINE RAILROAD.

AF5095'TO REACH THE STATION FROM THE U.S. POST OFFICE ON U.S. HIGHWAY 17 AT AF5095'THE SOUTH EDGE OF FORT OGDEN, GO SOUTH ALONG U.S. HIGHWAY 17 FOR 3.8 AF5095'KM (2.35 MI) TO THE JUNCTION OF LIVERPOOL ROAD ON THE RIGHT, THEN GO AF5095'RIGHT, WEST ALONG LIVERPOOL ROAD FOR 0.56 KM (0.35 MI) TO THE CROSSING AF5095'OF THE ATLANTIC COAST LINE RAILROAD AND THE STATION ON THE LEFT. AF5095'LOCATED 13.1 M (43.0 FT) SOUTH OF THE CENTER OF LIVERPOOL ROAD, 18 M AF5095'(59.1 FT) EAST OF THE EAST RAIL, 8 M (26.2 FT) NORTH OF A LAWN LIGHT AF5095'SUPPORT POLE, 2.5 M (8.2 FT) NORTH OF A 2-INCH MAGNOLIA TREE, 7.9 M AF5095'(25.9 FT) WEST OF A 24-INCH PALM TREE, 2.8 M (9.2 FT) SOUTH OF A AF5095'CONCRETE PROPERTY CORNER POST, 0.45 M (1.5 FT) NORTH OF A METAL AF5095'WITNESS POST AND ABOUT 0.61 M (2.0 FT) ABOVE THE LEVEL OF THE ROAD. AF5095'DESCRIBED BY G.F. SMITH.

AF5095

AF5095 STATION RECOVERY (1992)

AF5095

AF5095'RECOVERY NOTE BY DENI ASSOCIATES INCORPORATED 1992

AF5095'RECOVERED IN GOOD CONDITION.

AF5095

AF5095 STATION RECOVERY (1992)

AF5095

AF5095'RECOVERY NOTE BY SARASOTA COUNTY FLORIDA 1992

AF5095'TO REACH THE STATION FROM THE INTERSECTION OF STATE ROAD 72 (CLARK AF5095'ROAD) AND THE SARASOTA - DE SOTO COUNTY LINE, GO EAST ON STATE ROAD AF5095'72 (CLARK ROAD), 5.9 MI (9.49 KM) TO THE INTERSECTION OF STATE ROAD AF5095'72 (CLARK ROAD) AND STATE ROAD 769, GO SOUTH ON STATE ROAD 769, 8.0 AF5095'MI (12.87 KM) TO THE INTERSECTION OF STATE ROAD 769 AND STATE ROAD AF5095'761, GO SOUTHERLY AND EASTERLY ON STATE ROAD 761, 3.15 MI (5.07 KM) AF5095'TO THE INTERSECTION OF STATE ROAD 761 AND STATE ROAD 17, GO SOUTH ON AF5095'STATE ROAD 17, 0.85 MI (1.37 KM) TO THE INTERSECTION OF INTERSTATE AF5095'ROAD 17 AND LIVERPOOL BOULEVARD IN DE SOTO COUNTY, GO WEST ON AF5095'LIVERPOOL BOULEVARD, 0.35 MI (0.56 KM) TO THE STATION ON THE LEFT. AF5095'THE STATION IS U.S. COAST AND GEODETIC SURVEY (C.G.S.) BENCH MARK DISK AF5095'STAMPED ---W 260 1966--- SET ON A DEEP ROD THAT IS FLUSH WITH THE AF5095'SURFACE. (DISK LOOKS LIKE IT HAS BEEN HIT WITH A LAWN MOWER BUT IS AF5095'USABLE FOR G.P.S.) IT IS 43.2 FT (13.17 M) SOUTHERLY OF THE AF5095'CENTERLINE OF LIVERPOOL BOULEVARD AND 59.0 FT (17.98 M) EASTERLY OF AF5095'THE RAIL ROAD TRACKS.

AF5095'REFERENCES--

AF5095'REFERENCE MARK NUMBER 1 IS A STANDARD SARASOTA COUNTY (SARCO)REFERENCE

AF5095'DISK AND NAIL SET IN THE SOUTHERLY EDGE OF ASPHALT PAVEMENT ROAD BED AF5095'FOR LIVERPOOL BOULEVARD. IT IS 38.04 FT (11.59 M) NORTHEASTERLY OF AF5095'CORPS OF ENGINEER STATION W 260, AND 31.41 FT (9.57 M) EASTERLY OF AF5095'SARCO REFERENCE NO. 2.

AF5095'REFERENCE MARK NUMBER 2 IS A STANDARD SARASOTA COUNTY (SARCO)REFERENCE

AF5095'DISK AND NAIL SET IN THE SOUTHERLY EDGE OF ASPHALT PAVEMENT ROAD BED AF5095'FOR LIVERPOOL BOULEVARD. IT IS 37.12 FT (11.31 M) NORTHWESTERLY OF AF5095'CORPS OF ENGINEER STATION W 260, AND 31.41 FT (9.57 M) WESTERLY OF AF5095'SARCO REFERENCE NO. 1.

AF5095  
 AF5095 STATION RECOVERY (1993)  
 AF5095  
 AF5095'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1993  
 AF5095'DISK WAS FOUND SLIGHTLY SCARED BY LAWN MOWER BUT INTACK AND STABLE  
 ON  
 AF5095'ROD, ABLE TO OCCUPY FOR GPS OBSERVATIONS.  
 AF5095'STATION IS LOCATED ABOUT 3.6 KM (2.25 MI) SOUTH OF THE SOUTH EDGE OF  
 AF5095'FORT OGDEN, IN A MOWED LAWN AREA AND ON THE EAST RIGHT-OF-WAY OF THE  
 AF5095'SEABOARD COASTLINE RAILROAD, AND AT THE SOUTH SIDE OF LIVERPOOL ROAD.  
 AF5095'OWNERSHIP--SEABOARD COASTLINE RAILROAD.  
 AF5095'TO REACH THE STATION FROM THE U.S. POST OFFICE ON U.S. HIGHWAY 17 AT  
 AF5095'THE SOUTH EDGE OF FORT OGDEN, GO SOUTH ALONG U.S. HIGHWAY 17 FOR 3.20  
 AF5095'KM (2.00 MI) TO THE JUNCTION OF LIVERPOOL ROAD ON THE RIGHT, THEN GO  
 AF5095'RIGHT, WEST, ALONG LIVERPOOL ROAD FOR 0.64 KM (0.40 MI) TO THE  
 AF5095'CROSSING OF THE SEABOARD COASTLINE RAILROAD AND THE STATION ON THE  
 AF5095'LEFT.  
 AF5095'THE STATION IS FLUSH WITH THE GROUND. LOCATED INSIDE A 6-INCH IRON  
 AF5095'PIPE 18 M (59.1 FT) EAST OF THE EAST RAIL, 13.1 M (43.0 FT) SOUTH OF  
 AF5095'THE CENTER OF LIVERPOOL ROAD, 8 M (26.2 FT) NORTH OF A LAWN LIGHT  
 AF5095'SUPPORT POLE, 7.75 M (25.43 FT) WEST OF A 24-INCH PALM TREE, 2.8 M  
 AF5095'(9.2 FT) SOUTH OF A CONCRETE PROPERTY CORNER POST, 2.50 M (8.20 FT)  
 AF5095'NORTH OF AN ORANGE TREE, 0.45 M (1.48 FT) NORTH OF A METAL WITNESS  
 AF5095'POST AND ABOUT 0.61 M (2.00 FT) ABOVE THE LEVEL OF THE ROAD.  
 AF5095  
 AF5095 STATION RECOVERY (1995)  
 AF5095  
 AF5095'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (CFS)  
 AF5095'THE STATION IS LOCATED ABOUT 2.25 MI (3.62 KM) SOUTH OF THE SOUTH EDGE  
 AF5095'OF FORT OGDEN, 10.15 MI (16.33 KM) NORTHEAST OF INTERSTATE HIGHWAY 75  
 AF5095'AND STATE HIGHWAY 17 JUNCTION, IN A MOWED LAWN AREA ON THE SOUTH SIDE  
 AF5095'OF LIVERPOOL ROAD IN THE EAST RIGHT-OF WAY OF THE SEABOARD COASTLINE  
 AF5095'RAILROAD. OWNERSHIP -- SEABOARD COASTLINE RAILROAD. TO REACH THE  
 AF5095'STATION FROM THE U.S. POST OFFICE ON THE SOUTH EDGE OF FORT OGDEN, GO  
 AF5095'SOUTH ON U.S. HIGHWAY 17 FOR 2.00 MILES (3.22 KM) TO LIVERPOOL ROAD ON  
 AF5095'RIGHT, TURN RIGHT, WEST, ALONG LIVERPOOL ROAD FOR 0.35 MI (0.56 KM) TO  
 AF5095'THE SEABOARD COASTLINE RAILROAD CROSSING AND STATION ON THE LEFT. THE  
 AF5095'STATION IS FLUSH WITH THE GROUND. LOCATED INSIDE A 6-INCH IRON PIPE  
 AF5095'59.1 FT (18.0 M) EAST OF THE EAST RAIL OF THE RAILROAD, 43.0 FT (13.1  
 AF5095'M) SOUTH OF THE APPROXIMATE CENTER OF LIVERPOOL ROAD, 26.2 FT (8.0 M)  
 AF5095'NORTH OF A LAWN LIGHT SUPPORT POLE, 26.0 FT (7.9 M) WEST OF A 24-INCH  
 AF5095'PALM TREE, 9.2 FT (2.8 M) SOUTH OF A CONCRETE PROPERTY CORNER POST,  
 AF5095'7.6 FT (2.3 M) NORTH OF A 5-INCH GRAPEFRUIT TREE, 1.5 FT (0.5 M) NORTH  
 AF5095'OF A METAL WITNESS POST, AND IS ABOUT 1.0 FT (0.3 M) ABOVE THE LEVEL  
 AF5095'OF LIVERPOOL ROAD. NOTE -- THE MARK IS SCARRED AND BENT AS PREVIOUSLY  
 AF5095'NOTED BUT APPEARS IN GOOD CONDITION.  
 AF5095  
 AF5095 STATION RECOVERY (1996)  
 AF5095  
 AF5095'RECOVERY NOTE BY US POWER SQUADRON 1996  
 AF5095'RECOVERED IN GOOD CONDITION.  
 AF5095  
 AF5095 STATION RECOVERY (2001)  
 AF5095  
 AF5095'RECOVERY NOTE BY US POWER SQUADRON 2001 (MDB)  
 AF5095'HIT BUT USABLE

AF5095

AF5095 STATION RECOVERY (2002)

AF5095

AF5095'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2002

AF5095'RECOVERED IN GOOD CONDITION.

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AF7425 CBN - This is a Cooperative Base Network Control Station.

AF7425 DESIGNATION - WAUCPORT

AF7425 PID - AF7425

AF7425 STATE/COUNTY- FL/HARDEE

AF7425 USGS QUAD - FT GREEN (1987)

AF7425

AF7425 \*CURRENT SURVEY CONTROL

AF7425

AF7425\* NAD 83(1999)- 27 30 54.36943(N) 081 53 00.60906(W) ADJUSTED

AF7425\* NAVD 88 - 30.9 (meters) 101. (feet) GPS OBS

AF7425

AF7425 X - 799,220.391 (meters) COMP

AF7425 Y - -5,604,047.269 (meters) COMP

AF7425 Z - 2,928,957.370 (meters) COMP

AF7425 LAPLACE CORR- -1.53 (seconds) DEFLEC99

AF7425 ELLIP HEIGHT- 5.91 (meters) (05/31/01) GPS OBS

AF7425 GEOID HEIGHT- -25.04 (meters) GEOID03

AF7425

AF7425 HORZ ORDER - B

AF7425 ELLP ORDER - FIFTH CLASS I

AF7425

AF7425.This mark is at Wauchula Airport (FD06)

AF7425

AF7425.The horizontal coordinates were established by GPS observations

AF7425.and adjusted by the National Geodetic Survey in May 2001.

AF7425

AF7425.The orthometric height was determined by GPS observations and a

AF7425.high-resolution geoid model.

AF7425

AF7425.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AF7425

AF7425.The Laplace correction was computed from DEFLEC99 derived deflections.

AF7425

AF7425.The ellipsoidal height was determined by GPS observations

AF7425.and is referenced to NAD 83.

AF7425

AF7425.The geoid height was determined by GEOID03.

AF7425

AF7425; North East Units Scale Factor Converg.

AF7425:SPC FL W - 352,483.379 211,509.121 MT 0.99994281 +0 03 13.8

AF7425:UTM 17 - 3,043,800.503 412,744.066 MT 0.99969398 -0 24 29.5

AF7425

AF7425! - Elev Factor x Scale Factor = Combined Factor

AF7425!SPC FL W - 0.99999907 x 0.99994281 = 0.99994188

AF7425!UTM 17 - 0.99999907 x 0.99969398 = 0.99969305

AF7425

AF7425: Primary Azimuth Mark Grid Az

AF7425:SPC FL W - WAUCPORT AZ MK 359 57 09.5

AF7425:UTM 17 - WAUCPORT AZ MK 000 24 52.8

AF7425

AF7425|-----|

AF7425| PID Reference Object Distance Geod. Az |

AF7425| dddmmss.s |  
 AF7425| AF7486 WAUCPORT AZ MK APPROX. 0.6 KM 0000023.3 |  
 AF7425|-----|  
 AF7425  
 AF7425 SUPERSEDED SURVEY CONTROL  
 AF7425  
 AF7425 NAD 83(1990)- 27 30 54.36807(N) 081 53 00.60854(W) AD( ) B  
 AF7425 ELLIP H (09/13/90) 5.92 (m) GP( ) 4 1  
 AF7425 NGVD 29 (09/13/90) 31.3 (m) 103. (f) GPS OBS  
 AF7425  
 AF7425.Superseded values are not recommended for survey control.  
 AF7425.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 AF7425.See file dsdata.txt to determine how the superseded data were derived.  
 AF7425  
 AF7425\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RML1274443801(NAD 83)  
 AF7425\_MARKER: I = METAL ROD  
 AF7425\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+) )  
 AF7425\_STAMPING: WAUCPORT 1989  
 AF7425\_MARK LOGO: NGS  
 AF7425\_PROJECTION: FLUSH  
 AF7425\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 AF7425\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
 AF7425\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 AF7425+SATELLITE: SATELLITE OBSERVATIONS - 1989  
 AF7425\_ROD/PIPE-DEPTH: 17.8 meters  
 AF7425\_SLEEVE-DEPTH : 0.91 meters  
 AF7425  

AF7425 HISTORY	- Date	Condition	Report By
AF7425 HISTORY	- 1989	MONUMENTED	NGS
AF7425 HISTORY	- 19970430	GOOD	USPSQD
AF7425 HISTORY	- 20020603	GOOD	USPSQD

 AF7425  
 AF7425 STATION DESCRIPTION  
 AF7425  
 AF7425'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989  
 AF7425'THE STATION IS LOCATED ABOUT 7.24 KM (4.50 MI) WEST OF WAUCHULA, 0.8  
 AF7425'KM (0.50 MI) SOUTH OF VANDOLAH ROAD, AT THE WAUCHULA MUNICIPAL  
 AF7425'AIRPORT, ALONG THE EAST SIDE OF SONNY CLAVEL ROAD, NEAR THE  
 AF7425'SOUTH-SOUTHWEST END OF TURF RUNWAY 03-21. OWNERSHIP--CITY OF  
 AF7425'WAUCHULA, P.O. BOX 818, WAUCHULA FL 33873,  
 AF7425 PHONE 863-773-3131. NOTE--PERMISSION MUST BE OBTAINED BEFORE  
 AF7425'ENTERING AIRPORT. DICK WISEMAN AT AIRPORT.  
 AF7425'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 17 AND STATE  
 AF7425'HIGHWAY 64A (MAIN STREET) IN WAUCHULA, GO WEST-SOUTHWEST FOR 5.6 KM  
 AF7425'(3.50 MI) ON STATE HIGHWAY 64A TO VANDOLAH ROAD ON RIGHT. TURN RIGHT  
 AF7425'AND GO WEST FOR 2.1 KM (1.30 MI) ON VANDOLAH ROAD TO A SIDE ROAD LEFT,  
 AF7425'JUST AFTER CROSSING THE BRIDGE OVER TROUBLESOME CREEK. TURN LEFT AND  
 AF7425'GO SOUTH FOR 0.32 KM (0.20 MI) ON SONNY CLAVEL ROAD TO A SHARP TURN  
 AF7425'RIGHT. TURN RIGHT AND GO WEST FOR 0.32 KM (0.20 MI) ON SONNY CLAVEL  
 AF7425'ROAD TO A POINT WHERE THE ROAD TURNS LEFT AND WAUCPORT AZ MK ON  
 LEFT.  
 AF7425'CONTINUE AHEAD AND GO SOUTH FOR 0.5 KM (0.30 MI) ON SONNY CLAVEL ROAD  
 AF7425'TO THE STATION ON LEFT.  
 AF7425'THE STATION IS RECESSED 10 CM BELOW GROUND. LOCATED 22.5 M (73.8 FT)  
 AF7425'EAST FROM A SIGN INDICATING CURVE IN ROAD, 18.3 M (60.0 FT) WEST FROM  
 AF7425'A METAL TURF RUNWAY END INDICATOR, 18.0 M (59.1 FT) EAST FROM THE

AF7425'APPROXIMATE CENTER OF SONNY CLAVEL ROAD AND 2.83 M (9.3 FT) EAST FROM  
AF7425'A CARSONITE WITNESS POST. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH  
AF7425'A 5-INCH LOGO CAP.

AF7425'DESCRIBED BY S.E. RANDALL.

AF7425

AF7425 STATION RECOVERY (1997)

AF7425

AF7425'RECOVERY NOTE BY US POWER SQUADRON 1997

AF7425'RECOVERED IN GOOD CONDITION.

AF7425

AF7425 STATION RECOVERY (2002)

AF7425

AF7425'RECOVERY NOTE BY US POWER SQUADRON 2002

AF7425'COVER GONEDATASHEETS

DE9094 \*\*\*\*\*

DE9094 DESIGNATION - Z 564

DE9094 PID - DE9094

DE9094 STATE/COUNTY- FL/MANATEE

DE9094 USGS QUAD - RYE (1979)

DE9094

DE9094 \*CURRENT SURVEY CONTROL

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DE9094\* NAD 83(1986)- 27 35 46. (N) 082 16 33. (W) SCALED

DE9094\* NAVD 88 - 32.558 (meters) 106.82 (feet) ADJUSTED

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DE9094 GEOID HEIGHT- -24.88 (meters) GEOID03

DE9094 DYNAMIC HT - 32.508 (meters) 106.65 (feet) COMP

DE9094 MODELED GRAV- 979,137.7 (mgal) NAVD 88

DE9094

DE9094 VERT ORDER - SECOND CLASS I

DE9094

DE9094.The horizontal coordinates were scaled from a topographic map and have

DE9094.an estimated accuracy of +/- 6 seconds.

DE9094

DE9094.The orthometric height was determined by differential leveling

DE9094.and adjusted by the National Geodetic Survey in May 2004.

DE9094

DE9094.The geoid height was determined by GEOID03.

DE9094

DE9094.The dynamic height is computed by dividing the NAVD 88

DE9094.geopotential number by the normal gravity value computed on the

DE9094.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

DE9094.degrees latitude (g = 980.6199 gals.).

DE9094

DE9094.The modeled gravity was interpolated from observed gravity values.

DE9094

DE9094;	North	East	Units	Estimated Accuracy
DE9094;SPC FL W	- 361,490.	172,770.	MT	(+/- 180 meters Scaled)

DE9094

DE9094 SUPERSEDED SURVEY CONTROL

DE9094

DE9094.No superseded survey control is available for this station.

DE9094

DE9094\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLL740531(NAD 83)

DE9094\_MARKER: F = FLANGE-ENCASED ROD

DE9094\_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)

DE9094\_STAMPING: Z 564 2002

DE9094\_MARK LOGO: NGS

DE9094\_PROJECTION: FLUSH

DE9094\_MAGNETIC: M = MARKER EQUIPPED WITH BAR MAGNET

DE9094\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

DE9094\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

DE9094+SATELLITE: SATELLITE OBSERVATIONS - May 18, 2002

DE9094\_ROD/PIPE-DEPTH: 16.8 meters

DE9094

DE9094 HISTORY	- Date	Condition	Report By
DE9094 HISTORY	- 20020518	MONUMENTED	FLDEP

DE9094

DE9094 STATION DESCRIPTION

DE9094

DE9094'DESCRIBED BY FL DEPT OF ENV PRO 2002 (BPJ)  
DE9094'THE MARK IS ABOUT 9.3 MI EAST OF PARRISH, IN SECTION 23, TOWNSHIP 33  
DE9094'SOUTH, RANGE 20 EAST.  
DE9094'  
DE9094'TO REACH THE MARK FROM THE JUNCTION OF U.S. HIGHWAY 301 AND STATE  
ROAD  
DE9094'62 IN PARRISH,  
DE9094'GO EAST ON STATE ROAD 62 FOR 3.85 MI TO THE JUNCTION OF CORBETT JOHN  
DE9094'ROAD ON THE LEFT,  
DE9094'CONTINUE EAST ON STATE ROAD 62 FOR 4.45 MI TO THE JUNCTION OF SAFFOLD  
DE9094'ROAD ON THE LEFT,  
DE9094'CONTINUE EAST ON STATE ROAD 62 FOR 1.0 MI TO THE MARK ON THE LEFT, A  
DE9094'STAINLESS STEEL ROD  
DE9094'DRIVEN TO REFUSAL AT A DEPTH OF 55.2 FT WITH A NGS LOGO CAP FLUSH WITH  
DE9094'THE GROUND AND  
DE9094'LEVEL WITH STATE ROAD 62, THE DATUM POINT IS RECESSED 0.4 FT BELOW THE  
DE9094'LEVEL OF THE NGS  
DE9094'LOGO CAP.  
DE9094'  
DE9094'LOCATED 88.9 FT EAST OF POWER POLE NUMBER 16-271, 59.4 FT NORTH OF THE  
DE9094'APPROXIMATE  
DE9094'CENTERLINE OF STATE ROAD 62, 29.8 FT WEST OF THE APPROXIMATE  
DE9094'CENTERLINE OF A DIRT ROAD  
DE9094'LEADING TO WALKER FARMS, 10.2 FT WEST OF THE BARB WIRE FENCE CORNER  
DE9094'POST, 1.5 FT SOUTH  
DE9094'OF THE BARB WIRE FENCE AND 0.9 FT SOUTH OF A CARSONITE WITNESS POST.  
DE9094'  
DE9094'NOTE A MAGNET WAS BURIED ON THE SOUTH SIDE OF THE MONUMENT.  
DE9094'  
DE9094'NOTE ACCESS TO THE DATUM POINT IS HAD THROUGH A 5-INCH NGS LOGO CAP.  
DE9094'



**SURVEY INFORMATION**

## **A. Field Personnel**

The following field personnel worked on this GPS network, and related survey collection:

Party Chief: Maurice Havard

Party Chief: John Purpera

Instrument Man: Mitch Havard

Instrument Man: Verron McNeal

Rodman: Gary Ballard

The point of contact for survey related questions is:

Josh Hardy

Operations Supervisor

(985) 661-3001

## **B. GPS Logsheets**